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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

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State of Illinois,
County of Cook } **ss.**

Before me, a notary public in and for the State and county aforesaid, personally appeared Dora W. Theobald, who, having been duly sworn according to law, deposes and says that she is the business manager of the Journal of Land and Public Utility Economics, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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(Seal.) JEAN GRIEFEN (My commission expires, May 7, 1936.)

THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS

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The Insurance of Titles to Property

By JAMES G. SMITH

FOR a period of years a number of fundamental factors have been causing revolutionary changes in property values. The automobile, the movement of population, the falling off of and final disappearance of immigration, the growing decentralization of industry, the centripetal as well as centrifugal movements of population and business within industrial cities, the change in technique of living, all have operated in a more or less uncontrollable manner toward confusion in real estate values. In addition to these fundamental and long-range factors there has been during the more recent years an enormous deflation of all values. At such a time it is quite probable that all new legal and financial devices will be put to the test; many doubtful practices will be brought out into the open, into the courts, and impressed upon the minds of the investing public. The relatively new device, known as title insurance, which has been developed for facilitating transactions in the real estate market, is quite likely to meet such tests in the next few years, both in the courts and in the activities of title insurance companies.

All too often the buyer of real estate finds that he has purchased a lawsuit instead of the desirable property which he believed he was buying. In the purchase of real estate the buyer frequently knows little or nothing about the law of real property, and therefore requires someone who does know the law to examine into the exact status of the title to the property which he contemplates purchasing. The history of the title to most real estate in this country goes back to the Government. With the exception of the royal charter grants in colonial times, the United States Government made the first conveyance of the land and the first purchaser was secure in his position of owner. With the passage of time, the development of cities and industrial and commercial centers, accompanied by the transfer of real estate from one type of economic utilization to another, usually with subdivision of existing properties, but often with a combination of existing properties, the ownership of a piece of real

estate has become a very complicated thing. For this reason a special service, performed largely by lawyers and called abstracting of titles, or conveyancing of titles, has grown up.

Title abstracting and title insurance are sometimes confusedly considered to be identical, and it will be one object of this paper to clarify the fundamental differences between them. It is proposed to present first a discussion of the nature of the title abstracting services, focusing attention upon the type of risk involved in real property transfers and the extent to which such risks may be reduced by title abstracting, and to what extent they may be covered by title insurance.

Types of Risks to Real Estate Titles

There are two broad classes of threats to perfection of titles in real estate: (1) the possibility of imperfection of the record for one reason or another; (2) numerous hidden defects which would not appear on the record anyway.

Risks from Defects of Record. The abstracter of titles, or conveyancer, performs the service of making a condensed history of all transfers affecting any certain parcel of land, but the multiplicity of recorded instruments and the many court proceedings, probates, and lien foreclosures soon make abstracts very voluminous documents and interpretation of these abstracts in turn becomes nearly as difficult as interpreting the original records from which the abstracts are made. Therefore, the buyer of real estate must have that lawyer, or another lawyer, go over the abstract drawn by the conveyancer in order to give his expert opinion as to the perfection of the title. Even then the real estate purchaser finds that lawyers and courts differ in opinion as to the importance or lack of importance of certain defects of title, which might conceivably affect later title holders and involve the property in litigation or militate against its marketability. As an early writer on the subject has said:

> "Aside from errors of fact, . . . the possibilities of mistakes of law in the opinion are infinite. There are questions of law which are pure matters of opinion, having never been decided; or of mere guesswork as to which of opposing lines of reasoning will ultimately prevail, . . . and the Supreme Court has the last guess."[1]

But even this is not all.

Risks from Unrecorded Sources. In addition, some important facts pertinent to the validity and marketability of the title may not appear on the brief or abstract, because they do not appear on the public register. For example, whether a prior owner was married or single at the time of conveyance would not necessarily appear on the public register of deeds. If he had been married and failed to have his wife waive dower rights in the property, her interest might unexpectedly crop out against the property in the hands of an innocent subsequent holder. Oftentimes, examination of title involves the study of elaborate pedigrees, showing where the interest of each child of successive owners finally lodges. Other types of claims which could not be ascertained through an examination of an abstract of title or direct examination of the county records include, for example, claims arising from a forged deed, from a hitherto undisclosed heir or heirs, from fraud or misrepresentation; claims incurred by conveyances by infants or lunatics or under lapsed authority of revoked power of

[1] Leeming, Thomas, "Trust and Title Insurance Companies", 42 *Lippincott's Magazine* 886-93, 888 (December, 1888). Cf. Smith, James G., *Development of Trust Companies in the United States* (New York: Henry Holt & Co., 1928), pp. 152-64.

attorney.[2] Further threats to the perfection of title lie in the complex question of determining the application of various laws of inheritance when the heirs are scattered in other states or even abroad.[3]

Indeed, it has been said that there are no perfect titles, for beside the defects disclosed directly by an abstract, there may be many hidden defects, such as those which have been mentioned above,[4] and which are illustrative of the wide variety of possible claims. The hidden defect in the title may be caused by an error in the interpretation of a will. A testator may have a child born after the date of the will, rendering the will void as to such child. In titles passing through estates, all the heirs may not be named in the deed nor in the proceedings confirming title. In one case an adopted daughter was omitted. In another case a lunatic son was forgotten. In still another, on account of a secret marriage, the children of an heir were not named, while in another instance an illegitimate child was not named as her mother's heir.

Beside such possible defects in title arising from hidden sources, liens or encumbrances may crop up against the title from unexpected or remote sources. In subdividing a plot of land, the original plan was abandoned in favor of a new one, with a different numbering of the parcels. This resulted in the unfortunate situation of two people making claim to the same lot, several transactions removed from the original purchasers of the titles. This was not disclosed until two people at the same time set out to make use of the lot, and it was a case where hidden defects in title came to light.[5] In another case the description of a lot involved the question as to ownership of the land between high tide and low tide.[6] In another case the question of title was complicated at the death of a wife by a controversy as to whether joint ownership by a husband and wife in this case was a partnership or whether they were tenants by the entirety.[7]

Protection Against Defects of Record

For handling the first large group of cases, buyers of real estate have come to rely upon abstracters of title and examiners of title who frequently furnish the purchaser with a certificate of examination of title. In some states the assurance that the record of title is valid may be obtained by the registration of title through the system of title registration under public supervision known as the Torrens system. Such registration is available to a limited extent in this country, as the Torrens system is in use in only nine states—New York, Massachusetts, Illinois, California, Colorado, Oregon, Minnesota, Ohio, and Washington. With the possible exception of Massachusetts and Illinois, the system has not been notably successful. Two essential factors for complete and successful operation of the Torrens system are: (1) compulsory and continuous registration of titles without right of withdrawal and (2) the guaranty fund. Aside from the questionable constitutionality of such compulsory features, the complexity of property law in this country makes it extremely difficult to put the Torrens system into operation. It is also true, no doubt, that the

[2] Grutze, A. L., "Modern Business Demands Title Insurance", *Trust Companies*, December, 1930, p. 789.

[3] *Flood v. von Marcard*, 172 Pac. 884 (1918).

[4] McKee, S. S., "What is Title Insurance", 16 *Lawyer and Banker* 101 (1923).

[5] *Pearson et ux. v. Leigh*, 278 Pac. 989 (1929).

[6] *Wardell v. Commercial Waterway District No. 1 of Kings County, et al.*, 141 Pac. 1045 (1914).

[7] *Smith, Administrator v. Durkee*, 254 Pac. 207 (1927).

opposition of title insurance companies is partly responsible for failure to develop the Torrens system more extensively in the United States.

Besides, even with the Torrens system of registration, the difference of opinion of lawyers and courts in the interpretation of the record may cause losses to subsequent purchasers and give rise to costly litigations. If it became necessary for a holder of title to defend his title in court against any of these contingencies, the owner would have to pay his own cost of defense. The guaranty fund under the Torrens system, as it has developed in this country, gives the title holder a right of action but not insurance. Under title insurance the insuring company would pay this cost. In communities too small in population and wealth to support adequately a central title abstract plant engaged also in title insurance, the establishment of the Torrens system might be an aid in securing for local titles the necessary insurance from large title insurance companies located in metropolitan centers. These companies now write policies on the evidence of proper title registry or the title abstracts of local conveyancers and examiners of title.

It should be noted that the conveyancer and the examiner of titles are merely agents; the courts do not hold them liable beyond the liabilities ordinarily presumed to attach to agencies.[8] The conveyancer as such does not guarantee that his abstract is perfect, nor does the examiner guarantee that his opinion as to the validity of the title is in the form of a guaranty to the buyer of title against loss attributable to imperfect title, nor indeed to his opinion. If he is wrong in his opinion, the injured real estate purchaser has no redress as long as the examiner of title can show that he exercised customary diligence in his examination.

Because of these uncertain elements surrounding the validity of real estate titles the demand for title insurance has developed; and since any insurance business must necessarily operate on a large scale in order to secure successful results, only large financial institutions can undertake the business. In many cases, because of the uncertainties of this new business, title insurance companies do not desire to insure titles unless they themselves do the abstracting and thus are in a position to select the risks which they insure, much as life insurance and other forms of insurance select risks.

The Basis of Title Insurance

The development of title insurance has been somewhat different from that of other types of insurance. In life insurance and fire insurance the scientific basis of writing insurance has been discovered through recognition of the statistical law of large numbers; and similarly to some extent this is true in the case of automobile liability and casualty insurance. Losses are expected to occur in the natural course of business. Apparently, the earlier suppositions underlying the title insurance business, by contrast, were that the title insurance company would have a perfect record of titles, hire the best experts, and that therefore there would be no losses. Such an idea seemed to prevail with the court when it said in 1908 that necessarily the record title is all that a title insurance company can safely or judiciously insure.[9] While it is

[8] "Cumulative Benefits of Real Estate Title Insurance", 37 *Trust Companies* 595-6 (November, 1923); *Watson v. Muirhead*, 57 Pa. 161 (1868); *Gronseth v. Mohn*, 234 N. W. 603 (1931); and *Case v. Mortgage Guarantee & Title Co.*, 158 Atl. 724 (1932).

[9] *Bothin v. California Title Insurance & Trust Co.*, 153 Cal. 718 (1908).

true that even such a type of title insurance may be of great benefit to real estate transfer, obviously it is inadequate so far as the purchaser is concerned. The purchaser under such an interpretation of title insurance would be getting little more than a certification of title, or warranty; whereas the very name "title insurance" implies a complete protection to the purchaser against loss arising from his assumption that the title he pays for is what it purports to be in the contract entered into with the seller. The mere warranty or certification of title would not protect from failure resulting from defects not appearing on the public record and against which the buyer of property needs protection, and wants to buy protection. Against such losses no mere record can protect, and the study of such losses will further the working out of a scientific premium for proper title insurance against them.

Types of Insurable Risks

There are three types of risk which are insurable by title insurance: (1) risk of loss through errors of fact in the abstract of title, that is, the abstract taken from the register; (2) risk of loss through different legal interpretations of the facts; (3) and risk of loss through events outside the record of title which might defeat subsequent transfers. In the latter group are included creation of trust deeds, wills, land contracts, and other transfers which are not always recorded in the public register. Others are the likelihood of unwarranted sales of real property in the course of the administration of trusts of all kinds, the possibility of tax claims arising from a remote evasion of taxes, transfers made by a husband where he failed to have his wife sign away her dower rights in the property, and numerous other types of risks such as those which have already been listed at an earlier point in this discusssion.

While it is true that the first type of loss may be almost entirely eliminated by the establishment of an adequate title abstract "plant" and normally should be, there is still a residual of risk even there. For example, so far as the purchaser of title is concerned, if his later transfer of title disclosed an error in the record of facts of the title abstract company, he would have no automatic redress from the title company, but would have to show that there had been negligence on its part. If he held a title insurance policy, it would cover such a contingency automatically.

The second type of risk, the matter of interpretation of the abstract, is clearly a type of risk which lends itself to the business of insurance since differences of opinion on this interpretation may arise.

A third type of risk is one which might be avoided, but only to a slight degree, through the fact that the title abstract "plant" of the title insurance company would accumulate a great deal of information of this sort concerning the property whose history it is keeping, and wherever encountered would take care of such claims legally at the time of property transfers, thus straightening out the title history. However, there would be an economic limit of expense for research work beyond which it would not pay to go in order to uncover all these remote and hidden possible claims. In all three types of risk there is plainly an insurable interest to the title holder. Moreover, it seems clear that a sound basis for writing insurance is present. The losses would be absorbed by the large volume of business, and in addition selection of risk is possible by means to be explained presently. This has been the basis for the rapid

development of the real estate title insurance business in the United States.

Regarding the nature of the risks covered by title insurance, it is necessary to explain further that the defects insured against are those actually in existence at the time the policy is written, but not known at the time. No defect arising after the policy is written is insured by the policy, for it is assumed that such a contingency is not an insurable risk. The holder of title, if it is a good title when he obtained it, is supposed to be able to protect himself from the development of defects in the title after that time. For example, he could not jeopardize his title by his own misconduct, such as an illicit companionship with a common law wife which results in an illegitimate child and a consequent claim on the title in the event of his death, and still contemplate that title insurance would guard his legitimate family. Nor could he recover from title insurance because of inadvertance or ignorance on his part in the guardianship of his own interest in the title during his lifetime. These contingencies, by their very nature, are not insurable interests to the purchaser of title insurance, however much they may be to his heirs.

Similarly, it is assumed that where the purchaser of title insurance is a mortgagor, the insurable interest is in the perfection of title as of the date of the title insurance. It is then up to the mortgagor to guard his own interest against possible actions on the part of the mortgagee which might conceivably develop claims against the title. In order to guard themselves from such contingencies which in their nature are not insurable, title insurance companies specifically limit their liability to defects in the title, or to contingencies militating against the marketability of title, or to liens or encumbrances on the title, which existed at the time the policy was written, although hidden. This limitation upon their liability has been accepted as proper by the courts.[10] Oftentimes, the ordinary layman is mystified by what appear to be contradictory decisions in some of these matters. For example, a hidden lien may have the appearance of arising after the date of the title policy and yet be ruled as having existed at the time of the title policy. A mechanic's lien law usually provides that when a notice of a lien is filed, the lien shall relate back and attach as of the date of the commencement of the work, or as of the date of the first delivery of material for the building. Thus, if a policy is issued while a building is under construction, there may be no mechanic's lien on record, but afterward such a lien may be filed, which will relate back to a time prior to the date of the policy.[11]

Characteristics of the Title Insurance Business

Obviously, in searching title of contiguous properties one conveyancer may at the same time be duplicating the work of another from the point in the property's history prior to the date of subdivision, and such duplication may occur many times over and at the same time for one large tract which had previously been subdivided into numerous

[10] A recent decision in relation to this subject is *Sperling v. Title Guarantee & Trust Company*, 236 N. Y. S. 553, 227 App. Div. 5 (1929), a case which was decided in favor of the insured in the lower court but reversed in the Supreme Court on the grounds that it was specified in the title insurance contract that defects and encumbrances arising after the date of the policy are not to be deemed covered.

[11] Enslow, Charles A., "Title Insurance", 20 *Lawyer and Banker* 212 (1927). Also see in general a series of articles on the legal nature of title insurance by Hackman, F. C., "Nature and Characteristics of Title Insurance", 14 *Lawyer and Banker* 3, 52, 113, 178, 253 (1912).

parcels. As the volume of conveyancing becomes greater, there comes a time when it is profitable to build up a central agency for such work and thus do away with this duplication of effort and expense. For this purpose title abstracting corporations grew up, and they accumulated a record which could be depended upon with relative assurance so far as the defects of record are concerned. In the course of time the power to organize such a business came to be vested in trust companies through state laws. The trust companies, ordinarily, combine title abstracting with title insurance.

The equipment of a title insurance company is a highly specialized one, and has been referred to as the "plant". It consists of a transcription of all existing records concerning the property within the field of the particular title insurance company, and additional information which comes to light from time to time in the course of the company's services.

This mass of material is arranged by property index systems according to the location of the property. All transfers relating to a particular plot of land are thus grouped, and the later transfers are recorded with reference to the original plot, showing how the larger plots came to be divided into building lots. Such records are voluminous for each property taken separately, but when the whole record is combined it is readily understood that the title history of large groups of urban lots is really the history of one large plot of land. Once that title is examined for one of these lots and an abstract made, the abstracting of title is likewise done for many other urban building sites down to the point in their history where they became subdivided.

Title abstracting is, therefore, a type of enterprise which is highly amenable to large-scale production methods. By operating on a large scale, much of the work of title abstracting which would be done over and over again by individual conveyancers comes to be a matter of record in the plant of the large-scale conveyancer. It is also a "natural" monoply, just as are the enterprises of furnishing telephone service, gas, electricity, and other public utilities to the community. Once the plant of a title abstracting organization is built up for a given area, it constitutes an enormous advantage to the existing organization and stands as a great obstacle to the entry of competition into the field, because of the great cost of building up a rival plant. The rise of a competitive enterprise is effectively deterred by the knowledge that the existing plant could reduce its selling price, while still making plenty of profit, but at the same time preventing profitable operation of a new concern until after a long period of plant accumulation. Furthermore, the existence of a competing organization is by its very nature an economic waste, just as would be the duplication of telephone, water, or gas systems in the community.

The services performed under the heads of title abstracting and examination of title are essential to the maintenance of marketability of real estate. Clearly, the interpretation of the public records and the classification of this material with reference to specific properties greatly facilitate and at the same time safeguard the transfer of real estate. A similar end is served if the purchaser can secure some assurance against the hidden and unpredictable risks, which were described above as the second broad group, and which are presumably taken care of by title insurance. The need for a title guarantee is felt by the buyer since the courts will hold that the

abstracter is simply an agent to furnish the facts from the official record of title, without concern for their legal effects or their legal interpretation. Upon the facts furnished, the purchaser must determine for himself as to their sufficiency. For this purpose he may call in a lawyer to help him interpret the record, but this lawyer's interpretation cannot be assumed by the buyer as a guarantee of the validity of the title. It is merely his best interpretation and may not in case of legal contest be upheld by the courts. So it now becomes evident that, if the prospective buyer can take care of these uncontrollable contingencies by some form of insurance, the mobility of real estate is greatly increased.[12]

Thus it is clear that the ready availability of a central plant, where the history of all real estate titles in a community may be quickly obtained and interpreted, gives a service vastly facilitating the transfer of real estate; and the combination of that function with insurance against the hidden risks threatening the validity of title is an essential addition to this service. It should be noted that the business of title insurance has not done away with conveyancing and examination of titles, but rather supplements those functions.

Title Insurance on a National Scale

As has been intimated already, there is a tendency in the case of some large title insurance companies to develop a national title insurance business, as against a title insurance business covering only the area for which they have an abstract plant. In view of the nature of the insurance business, this may be regarded as an expected development, and one likely to continue. Smaller title insurance companies could then "reinsure" with the larger metropolitan title insurance companies to avoid extensive losses because of the impossibility of diversification of risk where the local business covers only a small area. Such national title insurance business is done on the opinions of local lawyers as to abstracts of title made by local conveyancers or conveyancing corporations.[13] Thus the local lawyers and conveyancers act for title insurance in the selection of risks as the local doctor does in examining for life insurance.

The Attitude of the Courts

In general, in the interpretation of the amount of protection a title policyholder has, the courts have been liberal to the title policyholder, or the insured. The general doctrine in reference to insurance as a whole is that where doubt exists it should be resolved in favor of the insured, on the grounds that the insurer draws up the insurance contract and after all the insured is purchasing insurance.[14] The exceptions and reservations in the title policy limiting the liability of the title insurance company are strictly construed to protect the insured. Most of the cases in the courts on title insurance during the past few years seem to have been decided in favor of the insured. In the Marandino case,[15] the title insurance company was held liable for an error in the description of the lot arising out of the fact that a city

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[12] Bethran, Alfred, "Title Insurance vs. Abstract or Certification of Title," 17 *Lawyer and Banker* 222 (1924).

[13] McNeal, William H., "The Broad Scope of Title Insurance," 17 *Lawyer and Banker* 157 (1924). Cf. Folsom, H. M., "A Reliable Guaranty of Titles," 10 *Lawyer and Banker* 44 (1917).

[14] *National Bank v. Insurance Co.*, 95 U. S. 673 and *Thompson v. Insurance Company*, 136 U. S. 287, cited in an article by Morton J. Stevenson in 42 *Central Law Journal* 443. This doctrine was applied in 1895 to title insurance in *Minnesota Title Insurance & Trust Co. v. Drexel*, circuit court of appeals, 8th circuit; and more recently in *Marandino v. Lawyer's Title Insurance Corp.*, 159 S. E. 181 (1931).

[15] *Supra*, n. 14.

ordinance taking five feet off its frontage was disregarded, even though it was argued that the purchaser knew that the five feet were to be taken off. In another case it was decided that, when loss is suffered by the insured, he is entitled to recover from the title insurance company the present value of the land rather than only the price which he paid for it.[16] In another case, a man bought property on September 11, 1925 in Atlanta; the City notified him on September 28, 1925 of an assessment due on account of an ordinance antedating his purchase of the property. He refused to pay and asked the trust company to pay because he held title insurance. It was carried to court and the title insurance company had to pay because it was held that the hidden assessment lien existed at the time its policy was written since the ordinance had been passed, although the property owners had not been notified.[17]

Title insurance usually includes the insurance of the marketability of title and this was strictly interpreted in favor of the insured in *Montemarano* v. *Home Title Insurance Company*,[18] March 3, 1932, where it was held that on a policy insuring against loss because of defects affecting marketability the insured is entitled to recovery of actual loss and not merely nominal damages. In this case the loss was the difference between the price for which the owner contracted to sell the property and the price actually received after the defect had been cured; and this loss was declared to be within the terms of the policy insuring against loss or damage caused by title defect, although it seemed apparent that the difference was the result of delay while general market values were falling rather than a direct result of the defect in title. In general, the courts declare that the value of the property at the time the insured is injured is effective and not the value of the property at the time the policy was written.[19]

To forestall many such losses, the title insurance companies try to get various minor imperfections cleared up before the issue of title policies and this sometimes causes delay for which they have been criticized;[20] particularly, since the courts have held that the refusal of a trust company to insure a title is accepted as evidence of lack of marketability of title, such delay might prove to be a serious matter.[21] Other similar cases recently illustrating the strict interpretation of reservations and exceptions are *Jones* v. *Southern Surety Company*,[22] involving trouble with title caused by the act of an incompetent, and the *Title Insurance Company of Richmond* v. *Industrial Bank of Richmond*,[23] where the trouble arose over street assessments.

Cost of Title Insurance

It is very easy for misunderstanding to arise as to the nature and adequacy of the charges made by title insurance companies for title insurance policies; and this very largely because there is no known criterion upon which to base such charges. The consumer of the service cannot, as in life insurance, see calculations as to what premium would be equitable to all concerned. Probably, the charges are made on the principle of "what the traffic will bear." The

[16] *Kentucky Title Co. v. Hail*, 219 Ky. 256; 292 S. W. 817 (1927).

[17] *Atlanta Title & Trust Company v. Inman*, 155 S. E. 364 (1930).

[18] 180 N. Y. 241.

[19] *Flockhart Foundry Co. v. Fidelity Union Trust Co.*, 102 N. J. L. 405 (1926).

[20] McCabe, Joseph V., "The Value of Title Insurance," 20 *Lawyer and Banker* 380 (1927).

[21] *Flood v. von Marcard*, *supra* n. 3.

[22] 228 N. W. 98 (1928).

[23] 157 S. E. 710 (1931).

critics say that the charges for title insurance are "thoroughly unjust and so flagrantly excessive in cost as to be absurd."[24] And particularly is this true, say the critics, since "some title insurance companies issue policies carrying exceedingly limited guarantees."[25] The title insurance companies are also attacked for being monopolies and for dividing the competitive field and not competing with each other, according to the "ethics of the business."[26]

The natural monopolistic characteristic of the business of title abstracting and title insurance has already been discussed, but there is no way to show that the premiums being charged by title insurance companies are excessive because there are no statistics of losses or cost figures of any sort. As one writer says, "If such information exists, it is closely guarded and is not published." It is probable that, if there were a truly competitive market for title insurance, we would have the development of the mutual principle as has been the case in recent years in casualty insurance.

[24] Rogers, W. L., "Cost of Title Insurance," 19 *Lawyer and Banker* 339 (1926).

[25] Higgins, E. C., "The Benefit of Title Insurance to the Mortgage Man," 20 *Lawyer and Banker* 84 (1927).

[26] Rogers, W. L., *op. cit.;* see also Suddath, Frank, "Confidence vs. Capital," 10 *Lawyer and Banker* 41 (1917).

Utility Rate-Making in the Depression

By JOSEPH C. SWIDLER

THE oral opinion of Judge Evans,[1] speaking for a three-judge federal district court which refused to enjoin the enforcement of an order of the Indiana Public Service Commission temporarily reducing the rates of the Indianapolis Water Company, has aroused a great deal of discussion as to whether it is the depression-born forerunner of a line of cases reducing utility rates in conformity with the general decline in commodity costs, wages, and the income of industry. The opinion is a short one, but its rulings on valuation and rate of return are of greatest significance.

It will be remembered that a few years ago, when prices were rising, the United States Supreme Court, in a case involving the same parties,[2] held that rates based on a valuation of $15,260,400 as of May 31, 1923 were confiscatory and that the fair value was "not less than $19,000,000." The Commission's valuation was based on average prices for the 10-year period ending with 1921. The majority opinion in the Supreme Court, written by Mr. Justice Butler, held that this was improper, that the higher prices prevailing in 1922 and 1923 should have been considered; that even a value based on average prices for the 10-year period ending with 1923 would have been too low; and that, "if the tendency or trend of prices is not definitely upward or downward and it does not appear probable that there will be a substantial change of prices", then the spot reproduction cost less depreciation was "a fair measure of the value of the physical elements of the property."[3] While the Court did not go so far as to say that spot reproduction cost was the only test of value, the opinion was generally interpreted to mean that in a period of relatively stable prices spot reproduction cost must be given predominant, if not sole, consideration.

The Commission, in reducing the rates of the company, followed the rule laid down by Mr. Justice Butler, and fixed the value of the Company's property on the basis of spot reproduction cost.[4] For the purpose of the order, the Commission fixed a tentative valuation of $21,182,252 by taking the minimum value of $19,000,000 fixed by the Supreme Court as of January 1, 1924, adding additions of $5,455,600, deducting depreciation, and further deducting 17.5% from the prior value and 22.15% from the cost of the additions, these percentages being taken from the testimony of a witness for the Company on the decline in water property construction costs since 1924.

"The $19,000,000 valuation as of January 1, 1924, would as of April, 1932, represent $16,180,000 and the net additions above referred to would as of April 1932, represent a value of $5,455,600, making a total replacement cost as of April 1932, of $21,635,600, and from this subtracting depreciation in the sum of $517,348, leaving a replacement cost as of April, 1932, of $21,118,252."[5]

The District Court, in its opinion

[1] *Indianapolis Water Company v. McCardle*, United States District Court, 2nd District, July 21, 1932.

[2] *McCardle v. Indianapolis Water Company*, 272 U. S. 400 (1926).

[3] *McCardle v. Indianapolis Water Co., supra* n. 2, at p. 411.

[4] *In re Indianapolis Water Company*, No. 10911, Ind. P. S. Com., June 17, 1932.

[5] *Idem.*

refusing to enjoin enforcement of the order, seems to have used substantially the same method as the Commission, and arrived at substantially the same conclusion. Judge Evans said:

"We cannot, at this time, fix with mathematical certainty and accuracy the exact value of that [the water company] property. But upon the showing before us, we think that twenty-one million two hundred and fifty thousand dollars is the sum which we will have to take. Of course, it is obvious that we reach this conclusion by taking nineteen million dollars as of January 1, 1924, and discounting that sum by seventeen per cent. Then the improvements that have been placed upon it since January 1, 1924, have also got to be reduced by the difference between the cost price and the present value. It is on that assumption that we read the figure of twenty-one million two hundred and fifty thousand dollars."

It is noteworthy that the property here involved was a water plant, and hence that less of its property had been constructed under the higher post-war prices than would be the case with the property of other types of utilities, especially of electric companies. It is easy to see how catastrophic such a writing-off of value may be in its effect on companies whose capitalization is based on the price levels of the boom period. As will be seen, the application of the spot reproduction cost made in the instant case resulted in a value which was still much higher than the actual investment in the property; it remains true, nevertheless, that its strict application would bring the value of many utilities below the investment figure, and so much below capitalization as to reduce greatly or even eliminate common stock dividends, and perhaps to endanger interest or dividend payments on senior securities. During the period of high prices much was written about the technical difficulties in the application of the reproduction-cost rule, and about its unfairness to consumers. Only the depression was needed to complete the indictment by showing that the rule does not benefit even the utilities. Whether or not the rule is now strictly applied, the mere possibility of its application must have an adverse bearing on utility credit. Moreover, since declining prices are merely a phase of economic crises which decrease the purchasing power of consumers, the reproduction-cost rule operates to decrease revenue per unit of product sold at the same time that the number of units itself declines. Thus utilities in times of depression are confronted with a double loss of revenue.

Nor is the consumer greatly benefited by the rule in times of depression. While the mere threat of reduced rates will injure a utility's credit, in order to benefit the consumer the threat must be carried out, which is another matter. If rates are reduced, the pressure on the company to pay dividends, perhaps in order to maintain the securities of a holding company, may lead to impairment of service, neglected maintenance, and failure to set aside adequate depreciation reserves. Impaired credit may, in turn, eventually result in higher rates because of higher cost of capital. Of the effect on investors, particularly investors in junior and holding company securities, it is hardly necessary to speak. While it may be that a fixed rate-base could not altogether have prevented the issuance of securities based on inflated prices, a stable rate-base with revenue consequently fluctuating between much narrower limits than is now threatened, would undoubtedly have done much to stabilize the value and return of utility securities.[6]

[6] The extensive customer-ownership campaigns of

Footnote 6 continued on page 349

It has sometimes been said that from the consumer's point of view the adoption of an investment-cost rate-base was unwise in times of declining prices since the reproduction-cost rule would result in lower rates than would the application of the investment-cost rule; and that the consumer, having been compelled to suffer reproduction cost while the use of this measure forced the payment of higher rates, should insist on its retention when it would operate to bring valuations and rates below the level possible under the investment-cost rule. The illusory nature of the supposition underlying this statement—namely, that reproduction cost in its actual application will fall below prudent investment—is indicated by a comparison of the valuation of the Indianapolis Water Company on the two bases.[7] In 1917 the Commission found that the cost of the Company's plant was somewhat in excess of $8,000,000,[8] the exact amount of the excess not being disclosed. Let us assume the investment was $9,000,000, and add thereto the capital additions for the period from January 1, 1917 to November 31, 1922 amounting to $1,639,146[9] and the additions for the period from January 1, 1924 to the time of the Commission's valuation in April 1932, which aggregated $5,455,600. This leaves unaccounted for the additions for the 13-month period from December 1, 1922 to January 1, 1924, which we may assume for our purposes to have been $1,000,000.[10] The total of these figures is only $17,094,746, which is $4,023,502 less than the value found by the Commission and $4,145,254 less than that found by the Court. It would require a further writing-off of almost 20% of the value found by the Court in order to make the reproduction-cost figure approximate the amount of the investment. If we assume only average additions for the December 1, 1922 to January 1, 1924 period,[11] and take the value as of 1917 at $8,000,000 instead of $9,000,000, the Court's value is higher than investment cost by approximately $5,600,000, or more than 26%. These percentages would probably be somewhat less in the case of electric utilities, and perhaps somewhat more in the case of railroads and street railways.[12] Of course, the whole of the difference is not attributable to differences in price levels; probably the greater part arises from the inclusion of intangibles, such as going value, in the reproduction cost estimate.

Equally significant as the Court's ruling on valuation is its ruling on rate of return. Here again we must refer back to the Supreme Court's decision in the earlier case. The Commission had allowed a return of 7% on the valuation which the Court found to be confiscatory. On appeal, however, the Commission and the City introduced evidence for the purpose of justifying a lower

Footnote 6 continued from page 348

the utilities have created an extremely embarrassing problem for them, especially so far as preferred stockholders are concerned. The passing of dividends on preferred stock in the hands of customers is highly destructive to customer good will, and most utilities will exhaust every recourse before permitting such a default. In fact, if not in law, preferred dividends may thus be treated very much like bond interest.

[7] It should be kept in mind that labor costs, which account for a large part of utility construction costs, do not decline as rapidly as the cost of material.

[8] *In re Indianapolis Water Co.*, No. 1400, P. U. R. 1917 E 557, 619 (Ind. P. S. Com.). The Commission's rather complete tabulation of known historical costs aggregated somewhat less than $8,000,000.

[9] As reported in *In re Indianapolis Water Co.*, No. 6613 (1917), P. U. R. 1923 D 29 (Ind. P. S. Com.).

[10] The average additions for the 170 months reported by the Commission were approximately $41,735 per month. Applying this average to the 13-month gap results in a figure of $542,555. The $1,000,000 estimate, therefore, seems ample.

[11] See note 10, *supra*.

[12] Unless the obsolescence factor were given great weight in valuing the street railways.

rate of return. The Court dismissed the contention in the following language:

"Appellants offered a study by Mr. E. W. Bemis of the rates of yield to investors on certain public utility bonds. He took into account 524 flotations put out at different times between July, 1921, and February 1924, inclusive. The average yield in the last six months of 1921 was 7.33 per cent and in February, 1924, 6.11 per cent. The trend was not downward throughout the whole period. It was upward from the last half of 1922 through all of 1923. And he testified that there should be added .4 of 1 per cent to cover brokerage. It is obvious that rates of yield on investments in bonds plus brokerage is substantially less than the rate of return required to constitute just compensation for the use of properties in the public service. Bonds rarely constitute the source of all the money required to finance public utilities. And investors insist on higher yields on stock than current rates of interest on bonds. Obviously, the cost of money to finance the whole enterprise is not measured by interest rates plus brokerage on bonds floated for only a part of the investment. The evidence is more than sufficient to sustain the rate of 7 per cent found by the Commission. And recent decisions support a higher rate of return."[13]

While average bond yields were thus held not to be the criterion of fair return, the reason given was that bond yields were too low. It is clear from this quotation that, normally, fair return must exceed bond interest and brokerage expense.[14] Both the Commission and the District Court held that under present conditions a 6% return was nonconfiscatory; yet neither the Commission nor the Court in approving a 6% return considered changes in the cost of bond or other money, and it is common knowledge that there has been no such decrease in the cost as would justify this decrease in the return. The Commission's action was based on the Company's strong financial position and the effect of the depression in reducing the income of consumers. The Court only said: "We have concluded that a rate of return of six per cent, under the conditions existing today, would not be confiscatory."[15] The Court, unfortunately, did not specify the conditions to which it referred; the phrase seems to have been used generally to cover the various economic aspects of the depression. There can be little doubt that the decline in consumers' income, on which the Commission had dwelt at some length, was one of the principal factors considered.

The mere fact that 7% had once been held to be a minimum return is, of course, no guarantee against a decrease under changed conditions. The Supreme Court has held that a rate of return valid when adopted may later become confiscatory, just as a rate confiscatory when adopted may become valid through a change in conditions.[16] In the United Railways case[17] the Court held that the general conditions attendant upon a period of inflation justify an increased return. The Court then said:

"What is a fair return . . . cannot be settled by invoking decisions of this court made years ago based upon conditions radically different from those which prevail today. The problem is one to be tested primarily by present day conditions. Annual returns upon capital and enterprise, like wages of employes, cost of maintenance and related expenses, have materially increased the country over. This is common knowledge. A rate of return upon capital invested in street railway lines and other public utilities which might have been proper a few years ago no longer furnishes

[13] *Supra*, n. 2, at p. 419.

[14] See also *United Rys. & Electric Co. v. West*, 280 U. S. 234 (1930).

[15] *Supra*, note 1.

[16] *Galveston Electric Co. v. Galveston*, 258 U. S. 388, 400 (1922); *Newton v. Consolidated Gas Company*, 258 U. S. 165 (1922); *Chastleton Corp. v. Sinclair*, 264 U. S. 543, 547, 548 (1924); *United Railways & Electric Company v. West*, note 14, *supra*.

[17] *Supra*, note 14.

a safe criterion either for the present or the future."

It is likewise common knowledge that in the present period of deflation "annual returns upon capital and enterprise, like wages of employes, cost of maintenance and related expenses" have dropped sharply, and if these are the conditions alluded to by Judge Evans, the Court's decree would seem to be founded upon good precedent. Unfortunately, a rate of return based on these conditions may not meet the test of supplying a sufficient surplus over the cost of money, nor of attracting new capital.[18] Especially is this true when we consider that the same factors justifying a lower rate of return likewise result in a lower reproduction cost, so that the rate-base and the rate of return shrink together.

The conflict in the various standards of fair return is essentially attributable to the fact that certain costs are much more rigid than others so that tests based on the cost of money, a relatively rigid cost, will in a period of falling prices conflict with tests based on the cost of materials and labor, which fluctuate widely with changes in general economic conditions. In more prosperous periods the standards do not necessarily conflict, since they determine only minimum returns, and the return may be fixed at a point above that required by any of the tests. In times of depression, however, there is no such easy solution of the problem; if two standards conflict, one or the other must be held to be controlling. Like the reproduction-cost rules in valuation, our present standards of fair return will not work in a depression. The problem of revising those standards to eliminate conflict is one which the Supreme Court may now have to face.

[18] Although the demand for utility services other than transportation has remained remarkably stable during the depression, there has been some decline, resulting in unused plant capacity which would, for many companies, obviate the necessity of raising new capital except for refunding and replacements. Doubtless the cost-of-capital test would be academic when applied to a number of such companies.

The Legal Status of Boards of Zoning Appeals

By VIRGIL D. COVER

Purposes of the Zoning Board of Appeals

IN the application of zoning ordinances the board of appeals has come to be an indispensable device. The framers of the New York City ordinance which was adopted in 1916 recognized the necessity of such a board and provided for it in the ordinance. Although the board was at first declared illegal because the zoning enabling act of New York State did not provide for it, that act was amended in order to give it legal standing.

The need for a board of appeals arises because zoning laws are uniform in application; they deal not with each particular lot but with all lots in each of the prescribed zones. Consequently, many cases arise in which a zoning regulation is unduly burdensome to an individual and the owner cannot follow the provisions without being subjected to unreasonable or almost impossible requirements. On the whole, the regulations are prescribed to bring the greatest possible benefit to a group of owners but in some cases no amount of care in drawing the law can avert injustice to particular owners. If lots are not uniform in size and shape, forcing the owner of an odd-shaped lot to follow the setback requirements might result in leaving the lot unutilized; if an area is zoned for a high-class use, when nearby existing structures are decidedly low-class, strict enforcement of the ordinance would operate to the detriment of the owners of that property.

The avoidance of hardship in such cases involves power on the part of the board of appeals to vary the ordinance within limits. Such varying power has also the effect of preserving the ordinance by lending it a necessary flexibility. Thus in its double function of preventing unreasonable hardship and preserving the spirit of the ordinance the board of appeals has been called the "safety valve" of zoning. It is pertinent, therefore, to consider briefly under what circumstances and within what limits these two functions may be performed.

Avoidance of Hardship. The importance of boards of appeals in providing the necessary machinery for avoidance of hardship under the operation of a uniform zoning rule is recognized in the Standard State Zoning Enabling Act. That act suggests that the local legislative body provide for the appointment of a board of adjustment,

> "and in the regulations and restrictions adopted pursuant to the authority of this act may provide that the said board of adjustment, may, in appropriate cases, and subject to appropriate conditions and safeguards, make special exceptions to the terms of the ordinance in harmony with general or specific rules . . . "[1]

In accordance with similar provisions in the various state enabling acts, boards of appeals have been appointed to interpret the terms of the zoning ordinance and to make exceptions reasonably consistent with the general welfare, so that no property owner will suffer unnecessary hardship by being compelled to adhere to a rigid set of rules governing the use of his property.

1. Pecuniary Hardship Not a Lawful Ground for Variance. In making variations

[1] *A Standard State Zoning Enabling Act*, Advisory Commission on Zoning, Department of Commerce, Washington, D. C., p. 9.

with the purpose of avoiding practical difficulties or unnecessary hardships, the board of appeals is subject to an oft-pronounced principle that the ordinance may not be varied with benefit to a single property owner as the sole justification. This principle was set forth definitely by the Supreme Court of Illinois in *Welton* v. *Hamilton*.[2] Although no reasons for the variance were set forth in the board's record, the court indicated it felt the reason was the possibility of greater profit if the variance were made. The court stated:

"The mere fact that the owner of a particular piece of property can make more money out of it if permitted to disregard the ordinance instead of being required to comply with it, is neither a difficulty or hardship authorizing the board of appeals to permit such owner to disregard the ordinance so far as it interferes with his plans for a more profitable use, and the legislature was without power to authorize an administrative board to grant such permission."

This principle had been set forth previously in *Matter of Stillman* v. *Board of Standards and Appeals of New York*.[3] The board had granted a variance to a property owner allowing the erection of an office building in a residential district. In declaring the exercise of such power invalid, the court pointed out that the board could not vary a zoning resolution simply because it would be advantageous to a single property owner.

"It may vary where there are practical difficulties in the way of carrying out the strict letter of the provisions so that the public health, safety, and general welfare may be secured and substantial justice done. These are the only criteria by which it can make its decision. Whether the property is more suitable for a forbidden use than for a permitted one is immaterial. Thus, the property in the instant case was purchased as restricted property. It clearly appears that it has not depreciated in value. Unquestionably a large profit would come to the owner if the restriction were removed, but it does not follow that he loses unjustly if it is not removed."[4]

2. Modifications of the Rule. However, application of the rule that pecuniary hardship is not a lawful ground for variance cannot be carried to the extent that an owner is deprived of all beneficial use of his property. This rule cannot be taken to the extreme without encountering the constitutional prohibition of confiscation of property without due process of law. This leads to the question of how far property owners are forced to bear pecuniary hardships by zoning regulation before the hardship becomes unreasonable. Does reduced income, and consequently reduced value, ever constitute a ground for a variance?

In *Sundlin* v. *Zoning Board of Review*[5] the court held that to compel the landowner to comply with the zoning ordinance would deprive him of all beneficial use of his property. The land next to the petitioner's property was zoned for business while the petitioner's property was in a residential zone. The neighborhood was changing rapidly to a business locality and heavy traffic passed the property. The owner asked a variance to allow him to establish a filling station but the board of appeals refused. The court described the business character of the district and said:

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[2] 176 N. E. 333; 344 Ill. App. 82 (1931). For further discussion of this point see p. 361 below.

[3] 225 N. Y. S. 402; 222 App. Div. 19 (1927).

[4] Many other cases are found upholding this rule. In *People ex rel Fordham Manor Reformed Church v. Walsh*, 244 N. Y. 280 (1927), the court upheld the board in refusing a permit for a filling station in a residential district as the land could profitably be used for permitted uses. In *Pounds v. Board of Appeals*, 223 N. Y. S. 459; 223 App. Div. 861 (1927), a violation of the area provisions was not allowed because of possible larger income. Other similar cases include: *Appeal of Junge*, 89 Pa. Sup. Ct. 548 (1927); *R. B. Construction Co. v. Jackson*, 152 Md. 671 (1927); *Broadway Corporation v. Board of New York*, 232 N. Y. S. 266 (1928); *People ex rel Werner v. Walsh*, 209 N. Y. S. 454 (1925).

[5] 145 Atl. 451; 50 R. I. 108 (1929).

"The enjoyment of property is derived from its use. There can be no conception of property aside from its control and use and upon its use depends its value . . . We are satisfied from the evidence that the section of Broadway under consideration is no longer a desirable residential section and that the building of a one- or two-family residence would result in financial loss . . . It must be assumed that it was the intention of the legislature and the ordinance makers that the board of review should so administer the ordinance as not illegally to deprive the owner of the beneficial use of his land."[6]

In analyzing the cases to determine the relative importance of the two considerations which flow from a strict enforcement of the regulations,—namely, pecuniary hardship and social advantage—several conclusions may be reached. On the one extreme, an owner may not be deprived of all beneficial use of his property, but even in cases upholding this rule the courts attempt to determine whether the public health, safety, morals, and general welfare can be preserved. On the other extreme, the fact that an owner is deprived of some pecuniary advantage does not constitute a ground for a variance. In such cases the court usually indicates other uses than the desired one to which the property may be put and profitably utilized. Between these two extremes are those cases in which the courts justify variances which do not run directly counter to the regulations but which do allow of their relaxation. The significant point in the majority of such cases, is that, although a pecuniary advantage is given, it is seldom used as a justification for the variance. The justification is usually found in the fact that the variance will operate to the advantage of the surrounding property.

Preservation of the Ordinance. The other important function of boards of appeals is to preserve the validity of the ordinance as a whole. If such a board were not provided, those property owners who felt the law was unreasonable would be forced to attack it in the courts. A successful attack on the constitutionality of the ordinance in its application to the exceptional owner would result in suspending operation of that particular provision not only as regards the aggrieved owner but as regards all other owners affected by that regulation. Numerous declarations of the unconstitutionality of particular provisions would cause the gradual disintegration of the entire ordinance and with this disintegration the eventual downfall of an important means of guiding urban development.

1. Granting of Permits with Conditions Imposed. One way in which boards of appeals ward off attacks on the ordinance is to allow a variance in the ordinance but at the same time to safeguard the character of the district by imposing special conditions. In prescribing these conditions the board may not set up any conditions of an aesthetic nature, for such a ground has not yet been held to be a proper basis of zoning.[7]

However, permits may be granted under conditions with certain other purposes in mind. In *Riverside St. Clair*

[6] In other cases the courts have refused to uphold a strict application of the zoning law if the effect is to take the beneficial use of the property. In *East Providence Mills v. Zoning Board of Review of Town of East Providence*, 155 Atl. 531 (1931), a mill company bought lots adjoining its property for extension purposes. The zoning ordinance was then passed and the lots were placed in a residential district. The court admitted that some incidental loss is unavoidable but in this case the land was most suitable for the purpose for which the mill company intended to use it. An unnecessary burden was thus thrown on the owner. *McCabe v. Zoning Board of Review*, 148 Atl. 601 (1930), was a similar case.

[7] In *Soho Park and Land Co. v. Town of Belleville*, 142 Atl. 548; 6 N. J. M. R. 683 (1928), the board granted a permit for a factory in a higher-use district if certain sides of the building be of a prescribed architecture and if trees were planted along the line of the lot. These conditions were held invalid.

Corporation v. *Walsh*[8] the board allowed the construction of a public garage which would extend more than 25 feet into a residential district if its construction conformed to conditions which were evidently intended to safeguard the character of the more restricted district. The board provided the building must be of fireproof material, the entrance must be on a certain frontage, the exterior of the walls on the street fronts must be finished with light-colored face brick with architectural terra cotta or stone trimmings, there must be no advertising signs, and the gasoline storage tanks must be restricted to a remote place.[9]

The granting of permits under conditions, if exercised with care, should prove a valuable aid in exercising the varying power. Without it a great many allowable permits would be rejected even though they were not clearly unreasonable. In using the power, however, care must be taken that the objects sought to be accomplished are legitimate and within the bounds of "the public health, safety, morals, and general welfare."

2. Congestion a Proper Consideration. The ordinance is also protected from attacks of unconstitutionality when variances are designed to eliminate existing congestion or to prevent possible congestion of the streets. A strict application of the ordinance which would promote congestion would prevent the accomplishment of one of the purposes for which zoning is intended and in these cases the board of appeals is again a useful device. In *Crystal Holding Corporation v. Town of Westfield*[10] the board was upheld in refusing a permit for an apartment house in a district in which apartments were forbidden. Evidence supported the finding of the board that the erection of an apartment house would tend to congest traffic further at an already dangerous point, and would greatly add to the peril to school children who were obliged to pass that way. On the other side of the question, elimination of congestion was an acceptable ground for a variance in the case of *Vesell* v. *Walsh*.[11] A permit was granted for a garage in the heart of the downtown theater and shopping district, immediately adjoining the largest theater, because an absence of parking facilities made a congested center at this point.[12]

The board of appeals is created, therefore, to act in those cases where a uniform law is found to operate unfairly and is given power to vary the ordinance in order to avoid practical difficulty or unreasonable hardship. But any such variation or interpretation by the board of appeals must be reasonable and consistent with public policy as expressed in the ordinance. In other words, adjustment of the uniform rule to particular cases must be accomplished without destroying the spirit of the ordinance. Some degree of flexibility has been shown to be justified but no wholesale change will be countenanced by the courts.

3. Border-line Cases. At times the board is called upon to act in what might be termed "border-line" cases in

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[8] 228 N. Y. S. 88; 131 Misc. 653 (1928).

[9] In *St. Patrick's Church Corporation v. Daniels*, 154 Atl. 343; 113 Conn. 132 (1931), a constantly increasing need in a business zone for parking space outside the highway limits was recognized and a permit was granted on condition that a fence be erected separating the property from the adjoining school property; that all advertising on the wall adjoining this property be removed, the wall painted, and no other advertising placed on the wall at any time. In addition, the station was to be kept in a manner satisfactory to the board at all times. Also *Reed v. Board of Standards and Appeals*, 243 N. Y. S. 263; 230 App. Div. 21 (1930).

[10] 147 Atl. 916 (1929).

[11] 243 N. Y. S. 518 (1928).

[12] Also *St. Patrick's Church Corporation v. Daniels*, *supra*, n. 9.

which the property owner wishes to use a lot just inside the more restricted district for a less restricted use or to comply merely with the area or height requirements of the less restricted district. Such a case was that of *In re Gilfillan's Permit.*[13] The petitioner operated a lumber yard on a lot which was in both residential and business districts. The land in the residence zone was used for storing lumber and the petitioner asked to be allowed to build a cement block shed to house lumber and other supplies. The board refused. The court felt erection of the building would lessen the fire hazard, eliminate the gathering of undesirable persons, conduce to the health of the community, and enhance the value and attractiveness of the surrounding property. This was thought to be an illustration of the class of cases in which the board of appeals should allow an exception.

A case which is similar in some respects is that of *East Providence Mills* v. *Zoning Board of Review of Town of East Providence.*[14] A mill company had bought some land adjoining the mill before adoption of the zoning ordinance. Later, the ordinance was passed placing the lots in a residential district, thereby depriving the mill company of the use of the lots for purposes of extension. An appeal was made to the board but was not granted. The court felt that under the circumstances a strict enforcement of the ordinance would result in unnecessary hardship to the mill company and to decide to the contrary would deprive the company of the opportunity of devoting the property to its "natural use."[15]

[13] 140 Atl. 136; 291 Pa. 358 (1927).

[14] *Supra* n. 6.

[15] In the case of *In re Blockholding Co.*, 253 N. Y. S. 321; 141 Misc. 818 (1931), the court refused to allow the extension of an apartment house, which would cover a plot 100 feet square, into the restricted residential zone, on the ground that such a structure would constitute an abrogation of the purpose of the ordinance. Likewise, in *Werblin v. Wigton*, 153 Atl. 103 (1931), the court upheld the board in denying an application for a grocery store in a residential zone even though the less restricted zone was across the street. See also *Thayer v. Board of Appeals of City of Hartford*, 157 Atl. 273 (1932).

Constitutionality of the Board of Appeals

Boards of appeals often consider cases in which a satisfactory solution seems almost impossible but generally they have carried on their work in a satisfactory manner.

"So successful has been the work of the Chicago Board of Appeals at compromising claims with the parties concerned, and at adjusting rival claims that no cases involving the decisions of this board have been reviewed by an appellate court or certiorari . . . Of the 1,869 cases which have been decided by the Chicago Board of Appeals, only 29 have been appealed."[16]

But this success of the Chicago Board of Appeals, which was established in 1923, has recently been marred by the case of *Welton* v. *Hamilton*[17] in which the "safety valve" aspect of the board has, in effect, been done away with. The 40 East Oak Street Building Corporation of Chicago proposed to construct an apartment hotel 214 feet high on an alley in a district in which the alley line height limit was 72 feet. The owners petitioned the Commissioner of Building for a permit and were refused. They then turned to the board of appeals, which ruled against the Building Commissioner, declaring, " . . . there is unnecessary hardship in the way of carrying out the strict letter of the zoning ordinance, and the spirit of the ordinance may be observed, public safety and welfare secured and substantial justice done by permitting the erection of the proposed building." The case was carried to the Illinois Supreme Court and was first decided in November, 1929. A rehearing was

[16] Baker, N. F., *The Legal Aspects of Zoning* (Chicago: University of Chicago Press, 1927), p. 86.

[17] *Supra* n. 2.

granted and the final decision was rendered by the court in June, 1931.

In its decision the Supreme Court declared that the power given to the board was an unconstitutional delegation of legislative power because no standard of sufficient definiteness was set up to guide the board and, since standards were lacking, the board had uncontrolled discretion. As a result of this decision the situation is none too encouraging for the continued effectiveness of the board of appeals as a means of administering a uniform law in the interests of substantial justice. If the decision in this case operates to reduce the power of the board, as seems likely, then apparently the only power remaining with the board is to rule as to the correctness or incorrectness with which the building inspector has interpreted the ordinance and to affirm or overrule his order or decision. Although the court specifically stated that, " . . . while the creation of the board of appeals is not shown to be invalid it is without authority to vary or modify the regulations or the provisions of the ordinance," stripping the board of its powers, as indicated in the latter part of the quotation, operates almost as disastrously as though the board were declared to be invalid. The case was similar in many respects to others which have come before the courts but in which the decisions have not been so far-reaching in their effects. The ground of attack in this case was similar to that in preceding cases and, although the defense was also similar, the court reached an entirely different conclusion. The difference in attitude of the Illinois Supreme Court in *Welton* v. *Hamilton* may be pointed out most clearly by a review of representative court cases which have involved similar questions.

The constitutionality of the board of appeals is most often attacked on the ground that the authority granted to it constitutes a delegation of legislative power. The attention of the courts in such cases is directed to a consideration of the language of the law providing for the board of appeals. If the provision defining the board's power is framed in such indefinite language that the board, in applying the law, must set up supplementary rules of its own, a delegation of legislative power is said to result from the law.

Such an attack was contained in the case of *R. B. Construction Co.* v. *Jackson*.[18] The contention was that the ordinance was rendered invalid by its provision authorizing the board of appeals to vary or modify any of its regulations where there were practical difficulties or unnecessary hardships in the way of its strict enforcement, the expressed purpose being, however, to preserve the spirit of the ordinance. This was characterized as an unconstitutional delegation of legislative power, because it did not provide a sufficiently definite standard by which the board might be guided in exercising its power to vary. The standard was "preservation of the spirit of the ordinance", but those attacking the board's power maintained that such a standard left so much to the board's discretion as to make its power a law-making rather than an administrative power. In reaching its decision, the Maryland court cited *Goldman* v. *Crowther*,[19] one of its previous cases, in which it had stated:

"It does not necessarily follow that because the standard and rules provided to control the exercise of the discretion vested in the board in passing upon the uses of property are too indefinite, that they are insufficient

[18] 152 Md. 671 (1927).

[19] 128 Atl. 50; 147 Md. 282 (1925).

to limit and control that discretion when applied to the location and construction of buildings."

In the present case, the court clearly indicated that it felt there was no delegation of legislative power, in spite of the rather indefinite standard:

"The power of modification which the ordinance confers upon the board of appeals in regard to the provision for side yards is to vary the dimensions of the specified areas only so far as may be necessary because of practical difficulties or unnecessary hardships . . . It is a limited discretion and plainly essential to the practical application of the plan prescribed. There is no invalidity in such a delegation of administrative authority."[20]

The constitutionality of the board was attacked in *Spencer-Sturla Co.* v. *City of Memphis*[21] and, as in the above case, the Tennessee court was not convinced that the ordinance contained a delegation of legislative power. The board was authorized to interpret the provisions of the ordinance in harmony with its fundamental purpose and intent. The court stated:

"The provisions of such an ordinance authorizing an administrative board to permit departures from the requirements of the ordinance have been held to constitute an unconstitutional delegation of legislative power when no sufficient measure or guide for the action of the administrative board is fixed in the ordinance. In the present case the administrative board is required to follow the 'fundamental purpose and intent' of the ordinance in every instance, and the board is not given such discretion as will amount to a delegation of legislative power of the city government."

In the above three cases the courts were satisfied with an indefinite statement and held that the power to vary, where there were "practical difficulties" or "unnecessary hardships, so that the spirit of the ordinance might be preserved," was a "limited discretion" and not a delegation of legislative authority. In so far as the board carried out its duties in harmony with this "fundamental purpose and intent" it was following a standard which was definite and the power to do so was not an unlimited authority. Its action would be invalid if it so varied the ordinance that its exercise of power would be a "law-making" action but all the court could do in reviewing such a case would be to throw aside the particular decision at hand.

However, in the case of *Welton* v. *Hamilton*,[22] decided in June, 1931, the Illinois Supreme Court refused to accept a similar standard as definite enough and declared the power delegated to the Chicago Board of Appeals to be a law-making rather than an administrative power and therefore unconstitutional. Likewise, in *Taylor* v. *Moore*[23] the court felt that the standard set was too vague and indefinite and, though it admitted that exercise of discretion was necessary to a certain extent for the proper administration of a zoning ordinance, this was feasible only when some standard or basis for such discretion and judgment was provided.

These different attitudes on the part of the different state supreme courts have evolved in spite of the similarity in the language of the laws setting up boards of appeals. What has been satisfactory to the courts in one state has not been so to those in another. The provision in the Illinois Zoning Law (1923) reads:

"Where there are practical difficulties or unnecessary hardships in the way of carrying out the strict letter of such ordinance, the board of appeals shall have the power in passing upon appeals, to vary or modify the

[20] *R. B. Construction Co.* v. *Jackson, supra*, n. 18.

[21] 155 Tenn. 70 (1927).

[22] *Supra* n. 2.

[23] 154 Atl. 799; 303 Pa. 469 (1931).

application of any of the regulations or provisions of such ordinance relating to the use, construction or alteration of buildings or structures or the use of land, so that the spirit of the ordinance shall be observed, public safety and welfare secured, and substantial justice done."[24]

In the *Welton* v. *Hamilton* case the Illinois court apparently gave great weight to the contention of the appellants that the board of appeals had authority "to determine and vary the application of the zoning ordinance without restriction," and that the zoning ordinance "contains no general or specific rules in accordance with which the board of appeals may determine and vary the application of the ordinance." The court said:

"The varying or modifying power is an unconstitutional delegation of legislative power . . . The statute gives no direction, furnishes no rule, and provides no standard for determining what are practical difficulties and unnecessary hardships which justify setting aside the provisions of the ordinance and varying or modifying their application but leaves those questions to be determined by the unguided and unlimited discretion of the board. 'Practical difficulties' and 'unnecessary hardships' are not well-defined and understood terms having a specific meaning which would enable an average person of ordinary intelligence to apply the tests of 'practical difficulty' or 'unnecessary hardship' to any particular case . . . Practical difficulties and unnecessary hardships, under this statute are whatever conditions the board of appeals decides to be such difficulty and hardship."[25]

Thus the standard heretofore accepted has been thrown aside, at least as far as boards of appeals in Illinois are concerned. What will be the results of the decision? As the board now stands its power is done away with; unless some satisfactory standard can be set up for the board's guidance, one may expect to see the disintegration of the ordinance by court nullification of individual provisions, which was the very thing the board was first devised to avoid.

Another effect is that it will do away with the possibility of applying common sense in administering the uniform zoning law. The board was not designated as a legislative body; it was not given power to amend the ordinance, but only to vary its provisions in order to eliminate practical difficulties or unnecessary hardships in particular instances. There can be no question as to the desirability of such a board with varying power, but the insistence by the court on definite standards by which the board will be guided necessarily raises the question as to the possibility of setting up such standards as will be broad enough to allow an application of common sense and still be acceptable to the court. If this cannot be done, there is no need for such a body, for purely routine affairs can be carried out by a single officer. The situation is none too encouraging, for the task of defining with any degree of completeness all situations in which difficulty and hardship might be found is probably impossible of accomplishment.

Other Grounds for Invalidity of the Board's Order in Welton v. Hamilton

Zoning authorities in recent years have rejoiced at the apparent liberality with which the courts have viewed the zoning laws and, from a study of the court opinions, one can note a tendency to uphold such laws whenever possible. Thus, the decision in *Welton* v. *Hamilton* comes as a distinct setback to the hopes of officials who have felt that the courts were willing to accept the general principles on which zoning was founded and that the remaining obstacles would not

[24] Illinois Laws 1923, H. B. No. 478, p. 268.

[25] *Welton v. Hamilton*, *supra*, n. 2.

be especially difficult to overcome. It does seem that the Supreme Court of Illinois adopted a harsher attitude than other courts have taken. A study of the facts of the case suggests that the Illinois Court might still have maintained a progressive attitude toward zoning and saved the effectiveness of the board of appeals, even while overruling the action of the Chicago Board in the instant case.

In the first place, the facts of the case would have made possible a declaration of invalidity of the board's action and the case might have been disposed of in this way. If such had been its course, the court's decision would have been more satisfactory to zoning officials, more in line with the attitude displayed by other courts, and not of such far-reaching effect. The board of appeals granted an appeal for the erection of a building in the 4th volume district of the City of Chicago which building would exceed by 140 feet the alley line height limit and would violate the volume district regulations of the zoning ordinance. Such an application of the varying power would seem to approach amendment of the ordinance rather than strictly a variance, and indeed, the court characterized the board's action as ". . . an overindulgence under the guise of varying."

A case in which a board had interpreted its powers to a similar extent was *People ex rel Stevens* v. *Clarke*[26] but the court in that case held the board had construed its powers in too liberal a manner. The power given was not considered a delegation of legislative power with unlimited discretion, but the board's order was overthrown. The ordinance had provided that an apartment house might be built on a given site but the ordinance regulated the kind and character of construction, providing that the building might not cover in excess of 35% of the area of the lot, nor exceed 35 feet in height, and should not contain more than 53 families per acre. The board allowed a structure exceeding the area provision by 29%, the height provision by 10 feet, and allowed a building to house 92 families. The court reversed the board, saying, "If the Board of Appeals had such authority it could nullify the zoning ordinance." In this case the court held the board had gone too far but did not take away, in effect, its power to vary as was done in the case of *Welton* v. *Hamilton*.

A second ground for throwing aside the board's ruling rather than nullifying its power might have been found in the lack of evidence in the board's record as to the reasons for granting the appeal. In *Prusik* v. *Board of Boston*[27] the board had failed to justify its action and the court, in discussing the failure to do so, made this statement:

"The respondent board was required by said section 'to make a detailed record of all its proceedings which record shall set forth the reason for its decisions.' These words mean that there must be set forth in the record substantial facts which rightly can move an impartial mind, acting judicially, to the definite conclusion reached. They are not satisfied by the mere repetition of statutory words. Minute recitals are not necessary but there must be definite statements of rational causes and motives, founded upon adequate findings."[28]

In *Welton* v. *Hamilton* the board failed in every way to meet this requirement. All the board gave as evidence of the motive prompting its decision was that

[26] 213 N. Y. S. 350 (1925).

[27] 160 N. E. 312; 262 Mass. 451 (1928).

[28] Other similar cases are: *Riverside St. Clair Corp. v. Walsh*, 228 N. Y. S. 88 (1928); *Heffernan v. Board of Review*, 144 Atl. 674; 60 R. I. 26 (1929); *Wilkins v. Walsh*, Sup. Ct. King's County; *People ex rel Fordham Manor Reformed Church v. Walsh*, 244 N. Y. S. 280 (1927).

it " . . . finds that in this case there is unnecessary hardship in the way of carrying out the strict letter of the zoning ordinance . . . ," and continued permitting the erection of the proposed building. The court pointed out that no attempt was made by the board

"to state what the difficulty and hardship was in the way of carrying out the strict letter of the ordinance or in what respect the spirit of the ordinance might be observed, the public safety and welfare secured and substantial justice done by permitting the erection of the proposed building. The board simply made the general finding that there was unnecessary hardship, etc., and ordered the issue of the permit, and the only thing decided is that the board of appeals thought a permit ought to issue in this case in accordance with the petition submitted and in violation of the express provision of the ordinance but with no indication of the reason why."[29]

This statement clearly shows that the court saw a less harsh method of dealing with the case. But instead of sending the case back to the board for an explanation of its action, the court struck at the very foundation of the board and saw fit to make a finding which would take away its power.

In spite of the lack of evidence as to the board's reason for granting the appeal, the court significantly indicated it believed that reason to be invalid. In decisions previous to *Welton* v. *Hamilton*[30] the courts have emphatically held that variances may not be made for the benefit of a single property owner and that financial situation or pecuniary hardship afford no adequate ground for varying the application of the zoning law. This ruling has been repeated so many times that it may be accepted as axiomatic. In *Welton* v. *Hamilton* the board did not give the financial status of the corporation or pecuniary hardship as ground for its variance but the court definitely indicated it felt such was the true reason:

"The ordinance had been in existence for years before the 40 East Oak Building Corporation bought the lot in question with full knowledge that it could not lawfully construct on that lot the building it is now proposing to construct there. The commissioner of building refused a permit for the construction of the building and he could not lawfully have done otherwise and the only hardship appearing in the record in the way of carrying out the strict letter of the zoning ordinance is, that if the corporation is compelled to comply with the provisions of the ordinance which restricts the height of its building on an alley to 72 feet it will be unable to have as many or as large rooms or as many square feet of renting space as it could have if permitted to erect the building on the alley to the height of 214 feet without setback, as required by the ordinance and will therefore be unable to make as much money on its investment as it otherwise would. It cannot be supported that this is the kind of difficulty or hardship which the legislature had in mind . . . "

It appears that the court should have been able to reverse the decision of the board of appeals on any one of these grounds. Perhaps some of the effectiveness of the board can be saved, but *Welton* v. *Hamilton* sets a precedent for

[29] In commenting on this part of the decision Ernst Freund, writing in 26 *Illinois Law Review* 575-7 (January, 1932), said: "It appears from this, that by the application of general principles of administrative law, the court should have been able to reverse the decision of the board of appeals upon the board's own record or lack of record, applying the general rule that when a board has power to make a determination, upon a hearing, there must be record evidence sufficient to substantiate the decision reached. Plainly the decision of the board could not stand this test. This more conservative method of dealing with the case would also have made the discretion of the board appear as one judicially controllable as to its exercise; and the delegation of such a discretion, being a valuable and indispensable adjunct to the necessarily complex provisions of modern regulative legislation, should not lightly be held to be invalid."

[30] *Matter of Stillman v. Board of Standards and Appeals*, *supra* n. 3; *Appeal of Junge*, *supra*, n. 4; *R. B. Construction Co. v. Jackson*, *supra* n. 18; and others.

other courts and, if followed, the "safety valve's" absence may lead to the downfall of the entire ordinance through gradual disintegration of its several parts. Property owners cannot be relied upon to look very far beyond their own interests and it may well be that with the resumption of building operations one may look for a growth of indifference on the part of property owners toward the Chicago Board of Appeals. The board will apparently be restricted to the administration of purely routine affairs, and as a result of the later prescription in the Chicago ordinance of the particular instances in which the board shall have power to grant a variance, will not have power to consider many of the matters heretofore brought before it. In the absence of a body with power to vary the ordinance in accordance with its fundamental purpose and intent, the property owners who believe observance of the ordinance will work unnecessary hardship and practical difficulty upon them will have no alternative than to attack specific provisions in the courts. Continued attacks will result disastrously. On the other hand, those property owners who cannot afford the expense of court procedure will be compelled to adhere to the provisions of the ordinance and bear the practical difficulties and unnecessary hardships. Furthermore, growth of the city along the best lines will be hindered. Not only is the power of the board of appeals hanging in the balance, but also the accomplishment of many of the desirable objects of zoning. The Illinois Supreme Court seems not to doubt the wisdom of its decision, however, since a motion for a second rehearing was denied.

Summary

The most important question in regard to the board of appeals at the present time, at least as far as the Chicago Board is concerned, is the possibility of its continued existence as an effective administrative board. Its fate in Illinois depends upon the framing of a standard for its guidance which will permit broad interpretation and yet be sufficiently definite to satisfy the courts. Since a more definite standard has been found to be necessary, the municipal legislative bodies should spare no effort in drawing up as comprehensive a guide as possible. Otherwise, the zoning law will be unsatisfactory both to zoning officials and property owners.

A summary of the board's powers necessarily must be general, since the instances coming before it for consideration are so various that no very definite statement would be adequate. Only in a few cases can the board's powers be definitely bounded. But, paradoxically, if such delimitation were possible, then there would be no need for the board, as a single administrative officer could very well perform the board's duties. The impracticability of so defining the cases of permissible variation of the zoning law is in fact the very reason for the existence of the board.

The foremost difficulty in the way of the board is in securing a satisfactory definition of "practical difficulty," "unnecessary hardship," and "fundamental purpose and intent of the ordinance." How far can a property owner be limited in the use of his property before he will suffer such difficulty or hardship that the spirit of the ordinance will call for relaxation of its terms? To determine such questions is the board's duty in the exercise of its varying power. The courts have been emphatic in stating that "pecuniary hardship" does not constitute a valid ground for a variance. This principle may not be enforced to the

extent that a property owner is deprived of all beneficial use of his property for this would not be in keeping with the "fundamental purpose and intent of the ordinance" but some pecuniary disadvantage is unavoidable and not unreasonable so long as it does not approach confiscation. On the other hand, variances may be made which relax the zoning law even though they do bring an advantage to the property owner if the use which is established is of such a character as to improve the district even though it does not conform to the regulations.

The board should interpret the ordinance with a view to putting each parcel of land to its proper use as determined by conditions in the district. In such cases the matter of confiscation is again important. When it does appear that the regulations are too strict, the board should endeavor to preserve them as far as possible and this is often accomplished by allowing a variance accompanied by special conditions as to the manner of building or of conducting the use.

Preservation of the use restrictions seems to be of more concern to the board than preservation of the area, height, or other restrictions. In those cases where it has been impossible to erect a structure which would house the permitted use and still conform to the area limitations, the board has been upheld in allowing the structure to violate the setback and side-yard provisions. For some uses, such as churches, schools, and recreational buildings, the structures are allowed to exceed the volume limits so long as they will not harm surrounding property.

The Volume of Telephone Company Financing and Cost of Telephone Capital: 1920 to 1931

By BARCLAY J. SICKLER

UNDER the provisions of the Transportation Act of 1920 the Interstate Commerce Commission was given authority to regulate the security issues of steam railroad companies and of telephone companies. In order to perform properly its duties under this Act, the Commission has required that railroad and telephone companies make certain reports which contain considerable data on financing and cost of capital, not obtainable from any other available source. Several studies of these data which pertain to railroad security issues have been made,[1] but so far as the writer is aware no study has been published in regard to telephone company financing. For this reason the present study has been made, as certain of the information which is available is believed to be of considerable interest. The reports from which the data were secured are made by all Class A telephone companies.[2]

Volume of Financing

The total par value of all debt issues reported and the distribution of these issues among types of companies are summarized in Table I. The most obvious fact shown by this table is that the American Telephone and Telegraph Company accounts for more than 45% of the total par value of debt issues over the 12-year period. More than 60% of this Company's debt issues during the period were sold in 1929 and 1930. The largest issue consisted of convertible bonds which were sold mostly to stockholders, practically all of the issue being almost immediately converted into stock.

Debt issues by Bell system companies, other than the American Company, during the period studied totaled to an amount almost equal to issues by the parent company. The years of heaviest issue by these Bell subsidiary companies were 1920 through 1923. The most recent four-year period has seen relatively few issues by this group of companies. The following summary illustrates the differing tendencies in volume of debt financing by the American Telephone and Telegraph Company and by its subsidiaries. In the six-year period from 1920 to 1925 the American Company did about ⅓ of the total Bell system debt financing, while in the six years ending with 1931 the parent company did almost ¾ of the debt financing of the system.

	Total Bell Companies	American Telephone and Telegraph Company	Other Bell Companies
1920 to 1925, incl..	$ 670,427,264	$226,632,800	$443,794,464
1926 to 1931, incl..	500,555,846	369,112,700	131,443,146
Total........	$1,170,983,110	$595,745,500	$575,237,610

It is also interesting to note the large

[1] See Dorau, H. B., "The Cost of Railway Capital under the Transportation Act of 1920," 3 *Journal of Land & Public Utility Economics* 1 (February, 1927); and Sickler, B. J., "Competitive Bidding for Railroad Equipment Trust Certificates," 5 *Journal of Land & Public Utility Economics* 71 (February, 1929).

[2] Class A telephone companies include all those having annual operating revenues in excess of $250,000.

TABLE I. PAR VALUE OF ALL DEBT ISSUES REPORTED, CLASS A TELEPHONE OPERATING COMPANIES, CLASSIFIED BY TYPE OF COMPANY, 1920-1931.

Year	Total All Companies	American Telephone and Telegraph Co.	Other Bell Companies	Independent Companies
1920	$ 85,938,767	$..........	$ 82,240,179	$ 3,698,588
1921	93,394,400	....	89,615,100	3,779,300
1922	69,175,600	....	62,115,000	7,060,600
1923	200,455,731	100,000,000	95,831,269	4,624,462
1924	62,717,546	1,632,800	55,717,681	5,367,065
1925	191,204,235	125,000,000	58,275,235	7,929,000
1926	70,341,716	....	56,901,466	13,440,250
1927	30,267,025	....	17,656,625	12,610,400
1928	27,342,870	....	7,199,470	20,143,400
1929	266,406,420	218,952,200	35,400,420	12,053,800
1930	183,858,190	150,160,500	13,556,190	20,141,500
1931	22,664,085	....	728,975	21,935,110
Total	$1,303,766,585	$595,745,500	$575,237,610	$132,783,475
Percentage Distribution of Total	100.0%	45.7%	44.1%	10.2%

increase in debt issues by independent companies throughout the period. The year of lowest volume of debt issues by independent companies was 1920 and the year of largest issue was 1931, although this latter year was one of negligible financing by Bell system companies. In the first six years of the period studied, independent telephone companies issued a total par value of $32,459,015, while in the last six years debt issues by independent companies totaled $100,324,460, or over three times as much as for the preceding six years. Total debt financing by the Bell companies was 25% less in the second six-year period than in the first.

Total debt issues are classified by type of issue in Table II. For the 12-year period, long-term issues (those having a maturity of over five years) amounted to 93.2% of the total par value issued. Large long-term issues (those having a par value each of $2,500,000 or over) accounted for a predominant portion of the total par value.

It is noteworthy that the long-term issues of smaller size, presumably those of the smaller companies, have been increasing in importance during the period studied. The following summary illustrates this tendency.

	Total Par Value of Long-Term Issues	Par Value of Long-Term Issues Less than $2,500,000 Par Value Each	Percentage of Small Issues to the Total
1920 to 1923, incl.	$ 378,890,897	$15,031,897	4.0%
1924 to 1927, incl.	345,637,121	36,718,121	10.6
1928 to 1931, incl.	490,315,970	45,617,770	9.3
Total	$1,214,843,988	$97,367,788	8.0%

In the most recent four-year period, if the large issue of American Telephone and Telegraph Company convertible bonds offered to stockholders is excluded from the computation, the smaller issues amounted to 16.8% of the total par value of long-term securities issued.

Short-term issues were much more important in the first five years of the period, particularly in 1920, than in more recent years. In 1920, short-term issues accounted for 68% of the total debt issues. Almost 2/3 of the total short-term issues in the entire 12-year period were sold in 1920 (Table II).

Cost of Capital at Price Received by the Company

Cost of capital at the price received by the company will be discussed next. Not all issues could be used for this section of the study, for the following reasons: (1) in certain cases securities were issued for property other than cash or for services; (2) American Telephone and Telegraph Company convertible bonds were sold at prices very markedly influenced by the conversion feature or were offered to stockholders at par; and (3) for three issues the price received by the company was not reported.

Securities issued for property other than cash or for services usually were those issued in cases of mergers or reorganizations, and there is strong probability that in many cases some discount was "buried" in the valuation placed on the property merged. This suspicion is strengthened by the fact that usually such issues were shown to have been sold at par. Consequently, only issues reported as having been sold for cash were used here.

American Telephone and Telegraph Company convertible bonds were excluded either because the price received was very apparently influenced by the conversion privilege, or because the bonds were offered to stockholders at par. In addition to the American Company's bonds, there were four other cases of convertible securities, three being in the short-term classification. As nearly as could be determined, the prices of these issues were not influenced by the conversion feature; therefore they were not excluded from this study.

The par value of the issues which could be used in the study of cost of capital at the price received by the company amounted to 73% of the total par value issued over the 12-year period. If the large issue of American Telephone and Telegraph Company convertible bonds offered to stockholders at par is

TABLE II. PAR VALUE OF ALL DEBT ISSUES REPORTED, CLASS A TELEPHONE OPERATING COMPANIES, CLASSIFIED BY TYPE OF ISSUE, 1920-1931.

Year	Total All Issues	Long-Term Issues* Par Value Each \$2,500,000 or Over	Long-Term Issues* Par Value Each Less than \$2,500,000	Short-Term Issues*
1920	\$ 85,938,767	\$ 25,000,000	\$ 2,586,000	\$ 58,352,767
1921	93,394,400	85,371,000	4,101,700	3,921,700
1922	69,175,600	64,500,000	3,850,300	825,300
1923	200,455,731	188,988,000	4,493,897	6,973,834
1924	62,717,546	50,000,000	7,707,070	5,010,476
1925	191,204,235	180,750,000	9,889,735	564,500
1926	70,341,716	63,169,000	5,825,791	1,346,925
1927	30,267,025	15,000,000	13,295,525	1,971,500
1928	27,342,870	11,335,500	14,753,870	1,253,500
1929	266,406,420	250,952,200	12,165,025	3,289,195
1930	183,858,190	173,160,500	8,890,190	1,807,500
1931	22,664,085	9,250,000	9,808,685	3,605,400
Total	\$1,303,766,585	\$1,117,476,200	\$97,367,788	\$88,922,597
Percentage Distribution of Total	100.0%	85.7%	7.5%	6.8%

* Long-term issues are those with a maturity of over five years; short-term issues, five years or less.

excluded from the calculations, issues used for this section of the study amount to 88% of the total.

Table III shows the weighted average yields at price received by the company classified by types of issues and by kinds of companies. This table shows a generally declining cost of capital for long-term issues throughout the period studied. Bell system operating companies' large issues (excluding American Telephone and Telegraph Co.) achieved their lowest cost, 4.74%, in 1928, but there were no issues in this class in 1931. Independent operating companies' large, long-term issues show the lowest cost of the period in 1931, when the rate was 5.36%. Small long-term issues (under $2,500,000 par value each) also show their lowest cost in 1931, 5.63%. This latter figure, however, is only very slightly below the 1928 rate.

Comparing the yields on different classes of long-term issues, a striking fact is the higher cost of debt capital to the American Telephone and Telegraph Company than to its subsidiary operating companies. The American Company had higher cost of capital in each of the three years when it issued debt securities used for this study. The following summary indicates that the excess cost to the American Telephone and Telegraph Company has declined from about ½ of 1% in 1923 to about ¼ of 1% in 1930.

Year	Cost to American Telephone and Telegraph Company	Cost to Other Bell Companies	Difference
1923	5.96%	5.47%	.49%
1925	5.57	5.19	.38
1930	5.23	5.02	.21
Simple Average	5.59%	5.23%	.36%

Also of interest are the higher costs of large issues of independent companies relative to the costs of Bell companies' issues of similar size. This undoubtedly reflects the poorer credit and weaker financial condition, on the average, of independent companies.

TABLE III. WEIGHTED AVERAGE YIELDS AT PRICE RECEIVED BY THE COMPANY,* CLASS A TELEPHONE OPERATING COMPANIES, 1920-1931.

Year	Long-term Issues†						Short-term Issues†
		Issues with a Par Value of $2,500,000 or Over				Issues with a Par Value of Less than $2,500,000	
	Total	Total	American Telephone and Telegraph Co.	Other Bell Companies	Independent Companies		
1920	7.86%	7.88%	....%	7.88%	....%	7.21%	8.36%
1921	7.12	7.12	....	7.12	....	6.93	7.00
1922	5.53	5.50	....	5.49	5.59	6.23	7.24
1923	5.74	5.73	5.96	5.47	....	6.52	8.10
1924	5.80	5.72	....	5.72	....	6.77	9.42
1925	5.49	5.46	5.57	5.19	....	6.25	....
1926	5.21	5.12	....	5.03	5.84	6.27	7.73
1927	6.04	....	....	....	....	6.04	8.46
1928	5.39	5.11	....	4.74	5.64	5.64	6.02
1929	5.41	5.36	....	5.36	....	5.77	5.54
1930	5.27	5.25	5.23	5.02	5.72	6.03	10.83
1931	5.48	5.36	....	....	5.36	5.63	8.88

* Yields were computed from bond tables at the price received by the company per $100 of par value. Averages were secured by weighting yields on the individual issues by the par value issued.

†Long-term issues are those with a maturity of over five years; short-term issues, five years or less.

Table III indicates that small long-term issues (less than $2,500,000 par value each) had higher costs of capital than larger long-term issues in every year except 1920 and 1921. In these two years the smaller issues had lower yields. The differential between weighted average yields on small issues and those on large issues varies between .27% in 1931 and 1.15% in 1926. The simple average differential for the years 1922 to 1931, inclusive, is .72%. The higher cost of small issues may be the result either of the size of the issues or the poorer credit ratings of the smaller telephone companies.

The yield on short-term issues is substantially higher than the yield on long-term issues in every year except 1921. The excess of short-term yields over long-term yields varies from .13% in 1929 to 5.56% in 1930, with the 12-year simple average at 2.07%. Yields on short-term issues in 1930 and 1931 increased greatly over similar yields in 1928 and 1929. It should be remembered that the yields shown are computed at prices received by the companies, and that they are affected by the high cost of selling short-term securities when expressed on a per-dollar-per-year basis.

It would be interesting to compare the cost of telephone capital with the cost of capital in other industries. However, very few comparable data are available, for most studies of cost of capital show the yield at price to the investor and not at price to the company, as in this study. However, one comparable study is available for steam railways,[3] and Table IV compares the weighted average yield at price received by the company for telephone and steam railway debt issues. This table shows that in all except three years the cost of telephone

TABLE IV. COMPARISON OF WEIGHTED AVERAGE YIELD AT PRICE RECEIVED BY THE COMPANY,* LONG-TERM TELEPHONE ISSUES AND ALL STEAM RAILWAY DEBT ISSUES, 1920-1931

Year	Class A Telephone Companies	Steam Railway Companies†	Excess of Cost of Telephone Issues over Railway Issues
1920...	7.86%	7.29%	.57%
1921...	7.12	7.21	(.09)‡
1922...	5.53	5.86	(.33)‡
1923...	5.74	5.61	.13
1924...	5.80	5.54	.26
1925...	5.49	5.45	.04
1926...	5.21	5.24	(.03)‡
1927...	6.04	5.13	.91
1928...	5.39	4.78	.61
1929...	5.41	5.20	.21
1930...	5.27	4.95	.32
1931...	5.48	5.02	.46

* Yields were computed from bond tables at the price received by the company per $100 of par value. Averages were secured by weighting yields on the individual issues by the par value issued.

† Includes all bond, equipment trust, and miscellaneous security issues on which yield at cost to company was available. Rates shown were taken from "Cost of Railway Capital", pp. 435-438 of this issue of the *Journal*.

‡ Parentheses ( ) indicate negative values.

capital was higher than the cost of steam railway capital. The differences range from .33% less than cost of railway capital in 1922 to .91% more than cost of railway capital in 1927. The simple average of the differences for the 11-year period for which a comparison is available is .25%. It should be noted that, to the extent that different classes of securities are used in financing the two industries, the comparability of the yields shown in Table IV is reduced.

Cost of Financing

Cost of capital as measured by yield at price received by the company is determined mainly by two factors: (1) the return demanded by investors before they will purchase securities; and (2) the "cost of financing", namely bankers' commissions for selling the securities and miscellaneous expenses of issuing the securities. A considerable amount of data concerning returns demanded by

[3] Dorau, *op. cit.*

investors is available, but a great dearth of information on cost of financing. In this study information has been obtained on cost of financing telephone debt issues by comparing the price received by the company, as contained in reports of telephone companies to the Interstate Commerce Commission, with the offering price to investors as reported in the *Commercial and Financial Chronicle's* monthly record of new capital flotations.

Data on offering price were not available for all issues for which price to the company was known. For the 12 years from 1920 to 1931, inclusive, offering price was procurable for telephone company issues having a total par value of $913,566,300, including 95.9% of the par value of issues for which price received by the company was available. For long-term issues of over $2,500,00 par value each, offering price was obtainable for all but one issue, comprising less than ½ of 1% of the total par value of such issues for which price to the company was known. For long-term issues of less than $2,500,000 par value each, offering price to investors was available for a much smaller portion. Issues on which offering price was published included 67.2% of those for which price received by the company was available.

Table V shows by types of issues the difference between weighted average price received by the company and offering price to investors per $100 of par value issued. This figure represents the average "cost of financing" for each $100 of par value issued. Table V indicates that cost of financing per $100 of par value for long-term issues is generally substantially higher for issues under $2,500,000 than for larger issues. This is true in every year, except three, where comparison is possible. Of the larger long-term issues, independent companies have the highest cost, American Telephone and Telegraph Company next,

TABLE V. DIFFERENCE BETWEEN OFFERING PRICE TO INVESTORS AND PRICE RECEIVED BY THE COMPANY PER $100 OF PAR VALUE,* CLASS A TELEPHONE OPERATING COMPANIES, 1920-1931.

Year	Long-term Issues†						Short-term Issues†
	Total	Issues with a Par Value of $2,500,000 or Over				Issues with a Par Value of Less than $2,500,000	
		Total	American Telephone and Telegraph Co.	Other Bell Companies	Independent Companies		
1920	$4.56	$4.56	$....	$4.56	$....	$....	$4.41
1921	4.71	4.71	....	4.71	....	4.01	....
1922	3.28	3.27	....	3.25	3.59	4.97	....
1923	3.63	3.63	3.81	3.42	....	5.00	....
1924	3.91	3.79	....	3.79	....	6.61	7.25
1925	3.62	3.51	3.69	3.06	....	6.43	....
1926	3.61	3.38	....	3.20	4.85	7.14	....
1927	6.66	....	....	....	....	6.66	7.00
1928	2.94	2.83	....	2.00	4.02	3.05	(1.50)‡
1929	2.87	3.00	....	3.00	....	1.57	(1.43)‡
1930	3.40	3.39	3.18	2.75	7.46	3.51	5.39
1931	4.34	4.60	....	....	4.60	3.93	5.73

* Averages shown were computed by weighting the amount for each issue by the par value issued.
† Long-term issues are those with a maturity of over five years; short-term issues, five years or less.
‡ Parentheses ( ) indicate negative values.

and other Bell operating companies, lowest. The following table summarizes these comparisons.

	12-Year Simple Averages of Yearly Weighted Averages—Cost of Financing per $100 of Par Value
Long-term Issues over $2,500,000	
American Telephone and Telegraph Co.	$3.56
Other Bell Companies*	3.21
Independent Companies†	4.41
Long-term Issues under $2,500,000‡	5.01

* Excluding 1920, 1921, and 1928 as abnormal. With these years included, the average is $3.37.
† Excluding one issue in 1930 with abnormal cost of financing, $8.90. The resulting average for 1930 with this issue excluded is $5.00, while the average shown in Table V is $7.46.
‡ Excluding the following abnormal issues: One in 1924 with cost of $7.35; one in 1926 with cost of $17.62; two in 1928 with negative costs of $.64; and one in 1929 with cost of $.56. The yearly averages with these issues excluded differ from the averages shown in Table V and are as follows: 1924, $5.63; 1926, $5.45; 1928, $5.20; 1929, $4.27.

The only types of issues for which the trend over the 12-year period may be determined are Bell company issues over $2,500,000 (other than American Telephone and Telegraph Company) and issues under $2,500,000. For the Bell companies, 1920 and 1921 showed costs greatly in excess of subsequent years. Since 1921 a declining tendency in the cost of financing is discernible. The following summary shows this tendency.

	Simple Averages of Yearly Weighted Averages—Cost of Financing per $100 of Par Value
1920 and 1921	$4.63
1922 and 1923	3.33
1924 to 1926, inclusive	3.35
1928 to 1930, inclusive	2.58

Cost of financing per $100 of par value for long-term issues under $2,500,000 averaged $4.66 in 1921-23, increased to $6.04 in 1924-27 (excluding abnormal issues), and fell to $4.23 in 1928-31 (excluding abnormal issues). Since 1927 the trend has been definitely downward, if abnormal issues be excluded:

1927	$6.66
1928	5.20
1929	4.27
1930	3.51
1931	3.93

The average cost of financing of short-term issues varied from $7.25 per $100 of par value to a negative amount of $1.50. Excluding the negative amounts in 1928 and 1929 (each year having but one issue with offering price available), the average cost over the period studied was $5.96.

Cost of financing may be expressed in several ways. The method of expression used up to this point—namely, an amount per $100 of par value—is perhaps the most common one. A more accurate method from the point of view of cost of capital is to express cost of financing as an annual percentage of the price received by the company. This cost is most easily computed by taking the difference between the yield at price received by the company and yield at offering price to investors.

Table VI shows these weighted average yield differences for Class A telephone company debt issues classified by types of issues and types of companies. The comparisons between types of issues and companies are similare here to those noted in regard to cost of financing per $100 of par value. The following table summarizes these comparisons.

	12-Year Simple Averages of Yearly Weighted Averages—Percentage Cost of Financing Per Year
Long-term Issues over $2,500,000	
American Telephone and Telegraph Co.	.26%
Other Bell Companies*	.24
Independent Companies†	.36
Long-term Issues under $2,500,000 ‡	.44

* Excluding 1920, 1921 and 1928 as abnormal. With these years included the average is .27%.
† Excluding one issue in 1930 with abnormal cost of financing, .60%. With this issue excluded the resulting average for 1930 is .36%, whereas the average shown in Table VI is .51%.
‡ Excluding the following abnormal issues: one in 1924 with cost of 1.09%; one in 1926 with cost of 1.75%; two in 1928 with negative cost of .06%; and one in 1929 with cost of .06%. The yearly averages with these issues excluded differ from the averages shown in Table VI, and are as follows: 1924, .52%; 1926, .48%; 1928, .40%; 1929, .32%.

TABLE VI. DIFFERENCE BETWEEN WEIGHTED AVERAGE YIELD AT PRICE RECEIVED BY THE COMPANY AND AT OFFERING PRICE TO INVESTORS,* CLASS A TELEPHONE OPERATING COMPANIES, 1920-1931.

Year	Long-term Issues†						Short-term Issues†
	Total	Issues with a Par Value of $2,500,000 or Over				Issues with a Par Value of Less than $2,500,000	
		Total	American Telephone and Telegraph Co.	Other Bell Companies	Independent Companies		
1920	.44%	.44%	...%	.44%	...%	...%	1.12%
1921	.46	.46	...	.46	...	.42	....
1922	.23	.23	...	.23	.30	.63	....
1923	.29	.29	.33	.24	...	.41	....
1924	.30	.28	...	.28	...	.84	2.86
1925	.25	.23	.25	.19	...	.56	....
1926	.25	.22	...	.20	.37	.66	....
1927	.55	...	...	...	...	.55	2.72
1928	.25	.26	...	.14	.43	.23	(.56)‡
1929	.34	.36	...	.36	...	.13	(.77)‡
1930	.21	.21	.20	.16	.51	.33	5.83
1931	.30	.32	...	...	.32	.27	2.39

* Yields were computed for each issue from bond tables at both price received by the company and at offering price to investors. Averages of the yields on both bases were then secured by weighting yields on the individual issues by the par value issued. Figures shown above are the excesses of weighted average yields at price received by the company over the weighted average yields at offering price.

† Long-term issues are those with a maturity of over five years; short-term issues, five years or less.

‡ Parentheses ( ) indicate negative values.

The trend of cost of financing per dollar per year over the 12-year period is similar to the trend of cost of financing per $100 of par value, except that trends in recent years are more erratic. For Bell operating companies the trend since 1922 does not appear to be either definitely downward or upward. The lowest costs of the period were recorded in 1928 and 1930, but the highest cost since 1921 also occurred in a recent year, 1929. Averages for groups of years throughout the period are shown in the following summary:

	Simple Averages of Yearly Weighted Averages—Percentage Cost of Financing per Year
1920 and 1921	.45%
1922 and 1923	.23
1924 to 1926, inclusive	.22
1928 to 1930, inclusive	.22

Percentage cost of financing per year for long-term issues under $2,500,000 shows an increase from an average of .49% for the period 1921-23 to .53% in 1924-27 (excluding abnormal issues), and then declines markedly to .33% in 1928-31 (excluding abnormal issues). The decline in percentage cost of financing per year since 1927 (excluding abnormal issues) has been marked for this class of issues, as the following figures indicate.

1927	.55%
1928	.40
1929	.32
1930	.33
1931	.27

Yield differences for short-term issues are very large in every case except for two issues which were sold at a lower price to investors than the reported price to the company. In one instance the cost of financing amounted to 5.83% per year. The normal yield difference appears to be approximately 2½%.

Table VII presents a comparison of costs of financing telephone debt issues

and steam railway debt issues as determined in Mr. Dorau's study previously mentioned.[4] Cost of financing telephone issues per $100 of par value in every year is in excess of the similar cost of financing steam railway issues. Average cost of financing steam railway issues was $2.67 per $100 of par value for the years shown, while the similar average for telephone issues, excluding the abnormal year 1927, was $3.71, a difference of $1.04.

TABLE VII. COMPARISON OF COST OF FINANCING, LONG-TERM TELEPHONE ISSUES AND ALL STEAM RAILWAY DEBT ISSUES

Year	Cost of Financing per $100 of Par Value		Percentage Cost of Financing per Year†	
	Class A Telephone Companies	Steam Railway Companies*	Class A Telephone Companies	Steam Railway Companies*
1920...	$4.56	$3.66	.44%	.52%
1921...	4.71	4.38	.46	.47
1922...	3.28	3.25	.23	.29
1923...	3.63	2.54	.29	.32
1924...	3.91	2.67	.30	.24
1925...	3.62	2.49	.25	.24
1926...	3.61	2.23	.25	.21
1927...	6.66	2.39	.55	.16
1928...	2.94	2.17	.25	.14
1929...	2.87	1.71	.34	.23
1930...	3.40	2.22	.21	.15
1931...	4.34	2.28	.30	.18

* Includes all bond, equipment trust, and miscellaneous security issues at which yields at cost to companies and offering price to investors were available. Figures shown were taken from "Cost of Railway Capital," pp. 435–438 of this issue of the *Journal*. Attention is especially directed to the discussion there as to the significance of the 1931 figures.

† Represents difference between weighted average yields at price received by the company and weighted average yields at offering price to investors.

In the case of cost-per-dollar-per-year, cost of financing telephone issues was less than for railway issues in the first four years of the period, but higher in the years since 1923 as the following summary shows:

[4] Dorau, *op. cit.*

	Simple Averages of Yearly Weighted Averages—Percentage Cost of Financing per Year	
	Telephone Issues	Steam Railway Issues
1920 to 1923, inclusive...	.36%	.40%
1924 to 1927, inclusive...	.27*	.21
1928 to 1931, inclusive...	.27	.17

*Excluding 1927.

In the last four-year period shown above, cost of financing steam railway issues averaged about ⅓ lower than cost of financing telephone issues. Cost of financing steam railway debt issues per dollar per year has declined much more rapidly in the period studied than has this cost for telephone issues.

Conclusions

Detailed analysis of the figures presented in this study discloses many conclusions, some of which have already been discussed, but several broader generalizations are also possible.

1. In regard to volume of financing, the par value of debt issues by independent and by small telephone companies has materially increased during the period studied.

2. Cost of capital has not decreased greatly for larger debt issues since 1922, although a declining tendency is observable. For small issues, the decline has been greater.

3. Cost of financing (cost of selling securities) has materially declined in the most recent four-year period compared with the earlier years of this study.

Reflections on the Art of Administering Deed Restrictions

By CHARLES S. ASCHER

THE delegation of residents from Utopia Park files into the office of the attorney for the Utopia Homes Company. He knows them well, because he dealt with them all when they bought their lots, or when they wanted the Company to contribute to the fund for the Fourth of July celebration, or when they wanted the Company to use its influence to help get traffic lights installed at the chief business corner in Utopia Park. They are substantial citizens—junior bank officials, proprietors of their own businesses, a college professor; and they are active civic workers in the Utopia Community Association.

They have come to demand that a suit be brought to enforce the restrictive covenants which are the charter of liberty and security of home owners at Utopia Park. John Curmudgeon of Parker Avenue has built a dog house in his back yard to shelter his police dog; it is painted bright blue, and sticks out like a sore thumb, to the great offense of the neighbors. "It's an absolutely clear violation. The restrictions say in black on white that no structure of any kind may be commenced, erected, or maintained without the approval of the Utopia Homes Company or the Utopia Community Association." The chairman of the delegation is emphatic. "If this is allowed to remain, the next fellow will build a garage or a stable, and the whole scheme has broken down." "Not only that," chimes in the professor, "but Curmudgeon can't claim that he didn't know he was violating the restrictions. It was in his deed when he bought. As soon as we saw what he was doing, a group of us visited him, and told him he was violating the restrictions. And he had the nerve to tell us to go to the devil."

If the Utopia Homes Company wants its cherished restrictions to stand, it is the clear duty of that attorney not to let a lawsuit develop over that dog house. He must respect the earnestness of the delegation, and be happy that they take their community affairs so seriously. But, if he has had any experience in the art of administering restrictions, he already recognizes the scent of a neighborhood row. In fact, the local manager for the Company has already asked him what to do about the professor's complaints that Curmudgeon's dog is ruining his flower bed; and the attorney has told him to report it to the police. The attorney knows that Mrs. Curmudgeon and the wife of her neighbor have almost had a hair-pulling contest. Neighborhood rows, let it be said dogmatically, are nothing to take to court; a judge, too, can smell them from afar, and a suspicion of animus will weaken somewhat his judicial regard for the sanctity of written agreements.

Then, consider how this whole affair will look to a judge, whose calendar is clogged with commercial disputes, condemnation proceedings, divorces, and affairs of state. "Taking the time of the superior court to argue about a dog house? Don't you know that it costs the state $500 a day to maintain this court?" And, if the judge happens to

love dogs (which is a fifty-fifty chance, for half the world loves them, half hates them, and there are no neutrals), he will add, "Curmudgeon has a perfect right to keep a dog," and you are lucky if he doesn't set himself to write an opinion which will go down as a literary classic in the annals of legal humor about dogs being man's best friend. Judges are like that.

The attorney foresees clearly that if, by chance, the judge applies the old maxim, *de minimis lex non curat*, and dismisses the suit, Curmudgeon and his friends will whoop it up all over Utopia Park, shouting that the restrictions have been knocked out, and hurrah for the downfall of the interfering neighbors. The attorney will know that the judge has *not* invalidated the restrictions, that he has only decided that this particular alleged violation is too insignificant to appeal to a court of equity, that the benefit to accrue to the plaintiffs will not sufficiently overbalance the detriment to the defendant. But the attorney will know equally well that this is a fine spun legal distinction to the comprehension of which the residents of Utopia Park are not spiritually attuned.

Moreover, the attorney is thinking even beyond the "successful" outcome of the suit. The court may uphold the plaintiffs in a sweeping decision, but the defendant has appeared at the trial with a cohort of sympathizers. Just before the trial both sides have made house-to-house canvasses for witnesses. The community is torn with dissension; hatreds are engendered which will survive the litigation. After all, the home owners will have to live next door to each other for many years after the lawsuit. The losing side is likely to be lost forever as possible cooperators in community upbuilding.

The delegation files out, not hiding its chagrin. "These restrictions are a joke. It's clear that the Company simply used them as sales talk, and doesn't mean to back them up." The attorney is lucky if one of the group doesn't threaten to move away and rent his house to negroes. (This threat is freely made, by the way, but for some reason practically never carried out.)

I have seen one fight about a dog house settled, after weary evenings of debate and conference, by Curmudgeon's agreeing to rebuild his shelter to conform to plans to be drawn by the Company's supervising architect, an A. I. A. and chairman of the state official planning commission. And nobody (including, I now confess, the attorney) smiled.

One of the Utopia Parks with which I have been concerned developed a tremendous tempest over a row house, the open porch of which had been enclosed in a manner not in conformity with the rules laid down by the regulatory committee. I had pictures taken, seriously considering whether to sue. Some cautious impulse led me to seek the advice of a Supreme Court judge whom I knew, who was familiar with Utopia Park and its purpose, and was sympathetic. I knew that this particular judge could never hear the case. I told him the whole story and showed him the pictures. He scanned them carefully: "Which house are you talking about?" I pointed it out. He looked me in the eye and asked, "Do you think that looks so terrible?" Well, of course, it was different, it violated the rules, but now that the judge mentioned it, I couldn't say that it looked so terrible. We did not sue.

There is, then, a tendency of people intimately associated with the development of what they feel is a model community, to lose their human perspective in the initial years. The architectural

consultant will unconsciously feel that the residents, by being there, are spoiling his beautiful picture. The company official will not sufficiently realize the natural emotions of the home builder or buyer; this is the house of his dreams, and he wants to impress his individuality upon it. And this is, within very broad limits, a perfectly legitimate feeling, which deed restrictions cannot be allowed to thwart.

A high official of the J. C. Nichols Company, a group of long experience, put it to me once: "There are a certain number of things in all our developments that we have to learn to look away from when we pass." The general manager of the Roland Park Company went even farther. He said, "We have learned that it won't do to turn people down flatly when they propose some structure which seems in direct contravention of the general rules laid down in the deed restrictions. They have often given their particular site more intimate study than we were able to; and they can show us that what they want won't harm their neighbor. Some of the most charming effects in Roland Park have come about this way—a wall right up against the property line, a porch extension."

The art of administration, in sum, is the free rendering of the black and white of legal documents in the pastel shades of human conduct and desire. The resulting effect is not as incisive as a steel engraving, but it has more warmth and glow. And, without the color, the restrictive covenants do not have the aspect of life.

Another prime point in enforcing restrictions is to respect the limitations of your charter of power. A Homes Association has been set up as the supervising agency; all plans must be submitted to it, and it is charged with keeping watch on Utopia Park, to see that no violations occur. The residents come to look on it as a general guardian of the peace. Some people develop a bad habit of leaving uncovered garbage cans at the curb or in the alley, and the neighborhood dogs get into them. The Curmudgeons' boy is seen smashing milk bottles. Johnson leaves his car parked at the curb all night. It is fatal if the Association, in its desire to protect the neighborhood, tries to deal with these questions. They should be referred respectfully but firmly to the Board of Health, or to the police. First of all, nothing in the restriction agreement gives the Association or the Company any jurisdiction over these matters. Accordingly, if the Association fulminates and the offender disregards the threats, the Association finds itself on the end of a limb. It cannot follow through, and it has weakened its standing in the community. And secondly, the municipal officials have the police power. They can act summarily; issue a summons, hale the offender to court, and have him fined—and all within a week.

Alas, the contract by which the home buyer agreed to submit to architectural control confers no such rights upon the harassed supervising agency. The restrictions may forbid outside radio aerials. The Company has gone to great expense to have all utility wires put under ground, and yet radio wires grow like vines. True, some of the violations are purely thoughtless, and the home owner will readily agree to remove the aerial upon request. But inertia is great, and it is surprising how many gentle reminders will be needed before the wire is actually down.

I have recently reviewed the records of the supervising body which for six years has enforced the restrictions upon

about 120 houses constituting one administrative division of Sunnyside Gardens, the City Housing Corporation's development in Long Island City, New York. I find, just on this matter of aerials, that two sober-minded residents actually requested permission to erect them, and of course were refused. On the other hand, I find minutes of action on eleven radio poles or wires erected without permission, which were removed after complaints by the Board. In several cases, it took up to one year to get these wires down. Letter after letter, interview after interview, month after month. The landlord says the wire was put up by the tenant. The wife says the husband did it, and she'll tell him about the complaint. The neighbors fret, and accuse the Board of inaction. The Board strains at the leash and wants to invade the man's lot and tear down the wire. In fact, the restrictions have the usual clause authorizing the Board to enter and abate violations; and the Board cannot understand the attorney's reluctance to authorize action under it. The attorney urges the ways of peace. His justification is that after six years there are no radio wires on any of the 120 houses.

But the administrative board did even better by this problem; and I offer this as my third point in the art. They foresaw a natural desire of the home owners to get good radio reception which would inevitably lead the layman to want an outside aerial. So they retained a well known consulting radio engineer to devise a scientific scheme, adapted to the design of these particular houses, which they could authoritatively offer the home owners as a solution of their problem, and which did not call for an outside wire.

I have always urged a similar attitude with reference to prohibitory signs in common open spaces. If the residents persist in beating a path across a greensward, don't first of all put up a "No trespassing" sign. Consider whether the path is not naturally the shortest road between two frequently visited points. Perhaps the landscape architect let symmetry triumph over human needs in his original design. Some gravel or flagstones may be wiser than a fence. They will save the grass and eliminate friction. The supervising board will appear in a helpful, not a negative light. Here again, the administrator can perform the vital function of making the plan serve the people for whom it was intended but who could not be consulted in its preparation, instead of making the residents slaves to the preconceived plan.

The most important element in the successful carrying out of a scheme of community control remains to be mentioned. There must be some executive officer, a permanent secretariat. Create a Homes Association, a body which is to determine policies in conformity with the spirit of the community and the desires of the residents. Provide, if you will, for representation by the developing company, especially in the initial years, to interpret to the newly gathered residents the ideas which animated the designers, and to preserve the integrity of the scheme. But see to it that funds are provided, by way of charge on the property, or fees for the approval of plans or for services rendered over and above the actual cost of labor and materials, so as to allow for the permanent employment of someone to carry out the policies thus determined.

The trustees of the Homes Association will necessarily be volunteers, busy with their own affairs, ready enough to give a night a month or a fortnight to meet to consider problems. They will not be able effectively to follow through.

Someone must be available to write the letters, visit the home, inspect the construction of the addition, the plans for which have been approved by the trustees. Someone must have time to visit the local police captain about the all-night parking, to confer with the street cleaning superintendent, to order the painting and installation of the sign, to consult with the attorney. Trustees come and go as their terms of office expire; there should be someone familiar with previous dispositions of analogous cases. There should be someone with stated office hours at a place convenient to the home owners, who can receive complaints, tactfully explain the rules (and he will have to explain them over and over again, to the point of tears), pass on requests for architectural approval, see that they come before the supervising architect or the trustees of the Association.

If the development is large, this is a full-time job for a career man in higher diplomacy. If the enterprise cannot stand the overhead of a full-time secretary, there should be someone who is habitually around the premises and definitely paid to devote the necessary number of hours a week to this work. Perhaps he will be a man in the sales or management office of the company, or a resident with an office in the community.

A final suggestion remains. The restriction agreement will necessarily, if it is wisely drawn, vest a large measure of discretion in the supervising agency. Let this group, as soon as enough experience has accumulated to make wise decisions possible, standardize its rulings by establishing regulations. If fences are within its jurisdiction, let the supervising architect prepare blue prints of three or four types between which the home owner may choose. These authorized designs can then be put forth on this basis: if you will choose from among these, the secretary can approve your request for permission to erect a fence without further formality; otherwise you will have to submit your own design to the supervising architect or trustees, and there will be a fee and delay. In this way the trustees of the Association will be relieved of much detail, and will be free to devote their sessions to true questions of policy. They will also free themselves from any suggestions of preferential treatment of one home owner over another.

These are some of the problems of the "after care" of a restriction agreement. Too many deed restrictions have been written which seem ironclad to an intending purchaser and to the developing company, but which are doomed to create dissension in the community and fail of their purpose because no one has sufficiently considered the human problems which will arise in enforcing them, and because no proper machinery has been established for their sound administration.

Intra-Exchange Telephone Rates—The Telechronometer

By JAMES K. HALL

IN efforts to master and advance the mechanical technique of industry, managements often have failed adequately to consider and to solve the economic and social problems created. New industries, almost without exception, become so concerned with the solution of technical problems as to preclude a sound and scientific study of the economic problems which arise. The telephone industry, which is but a half-century old, has made astonishing advances in mastery of the mechanical art, but the economic problems have been hardly more than visualized. If the industry is to render the fullest possible service to society and is to become a still more integral part of our economic and social system, attention must be directed to the economic problems which are pressing for solution. Intra-exchange differential rates are among the most urgent of these economic problems.

During the past decade an unusual and highly interesting experiment has been conducted in the differential pricing of intra-exchange telephone service. This experiment holds possibilities of exerting a very real influence on the development of telephone rate theory and the differential pricing of intra-exchange telephone service, and is fraught with economic and social consequences so significant as to deserve the serious attention of economists, engineers, public regulatory officials, and the public generally.

While the most common means of giving measured telephone service is by metering the number of messages through the use of message registers located in central offices with the service priced in proportion to the message output of subscribers, other measuring devices have been used with service pricing on a basis other than the message. One of the most interesting and significant methods of service measurement designed to secure more equitable and scientific differential rates has been the use of the telechronometer, a device which measures service in units of subscriber holding time with service pricing on the basis of holding time rather than message output. Where differential rates are based on the number of messages, regardless of message holding time and time of day of call, the unit of service varies so widely in these two respects as to result in substantial inequities in pricing. It is not to be inferred, however, that message-rate service is not generally an improvement over flat-rate service; obviously it is. On the other hand, a more highly refined unit of service is to be desired in the interest of eliminating inequities that exist in differential rates based on the message as a unit. The need is for a unit of service which gives due weight to message holding time and time of day of call. This unit of service also must be capable of practical application. The measurement and pricing of service on the basis of subscriber holding time by means of the telechronometer appear to approximate the theoretical ideal more closely than any other method of exchange service measurement and pricing yet devised.

The history of the mechanical

development of the telechronometer goes back to 1908 when the Rochester Telephone Company became interested in securing a commercially feasible system of recording telephone service on the basis of holding time. Various metering devices had previously been designed and patented with this end in view. No satisfactory system of operation had been devised, however, whereby local batteries could be eliminated in meter operation, as some source of electrical energy was necessary for the operation of the metering mechanism.[1] Mr. Garrison Babcock, a telephone engineer of Rochester, was retained at the suggestion of Mr. C. M. Beattie[2] and given instructions to investigate and report on the possibility of measuring telephone service in units of holding time. After analyzing and experimenting with existing proposed systems, Mr. Babcock produced an improved type of meter and developed a method of operation which was adapted to common battery exchanges and which did not require a local battery to furnish energy for the operation of the metering mechanism.[3] Through cooperation with the General Electric Company, standardization of the system was obtained, and the manufacture of a number of meters and several sets of central office equipment followed. The next step was to secure installation of the system in some telephone exchange where its operating and economic features could be observed. Efforts in this direction during the period following 1910 were unsuccessful because of existing Bell-Independent competition. Competing companies believed that the adoption of measured service would be unwise in view of existing conditions. Because of the difficulties of getting a desirable exchange to install the telechronometer metering system, the owners of the patents decided to await fuller development of regulatory bodies and powers, believing that rate wars and unprofitable and uneconomic competition would be eliminated in large part under a system of state utility regulation of a reasonably effective character.

The Installation at Everett, Washington

At the close of the world war the Puget Sound Telephone Company through its President, William N. Winter, negotiated with Garrison Babcock regarding installation of the telechronometer system in the Everett, Washington, telephone exchange. Permission to install the necessary central office actuating equipment and to equip a limited number of lines with meters for experimental purposes was forthcoming from the Washington Public Service Commission. In October, 1920, telechronometer service was provided for 16 subscribers of the Everett exchange, and a record of their use and reactions was made over a period of eight months.[4] The results of this preliminary test convinced both the Department of Public Works (formerly the Public Service Commission) and the Puget Sound Telephone Company "of the desirability of conducting more thorough and more extensive tests under actual operating conditions."[5] The Department of

[1] R. and W. H. Davis and D. C. Woodbury were apparently the first to develop (in 1902) a metering circuit adaptable to common battery exchanges. This system, made independent of local generators, had the serious defect of requiring a local battery to supply the energy for the operation of the metering mechanism. (R. and W. H. Davis and D. C. Woodbury, "Recording System," United States Patent No. 691,450, January 21, 1902.)

[2] Auditor of the Rochester Telephone Company.

[3] This system was patented on February 9, 1909, as United States Patent No. 912,268, and became the first of a group known as the Beattie-Babcock patents.

[4] *Re Puget Sound Telephone Company*, P. U. R. 1925 B 597.

[5] *Ibid.*

Public Works subsequently ordered the Puget Sound Telephone Company on June 1, 1921 to install the telechronometer system throughout the Everett exchange.[6] With the meters installed and placed in operation, and with the development of a schedule of rates, the Puget Sound Telephone Company requested an order authorizing their use. The Department thereupon issued an order making effective April 1, 1922 the measured rates for a period of 60 days.[7] Use of the telechronometer system and measured rates continued until the Department, by order of September 25, 1922, required the Telephone Company to return to the former flat-rate schedule.[8] The abandonment of measured service was attributable to the alleged inaccuracy of registration by the installed meters and the receipt by the Department of petitions from a large number of subscribers both for and against the continuance of measured service.[9] Meanwhile, a careful inspection of meters at the subscribers' premises with respect to mounting and operation and in the University of Washington laboratories where they were opened and examined in detail, was undertaken by engineers of the Department of Public Works assisted by engineers and experts of the Department of Electrical Engineering of the University of Washington, the American Telechronometer Company, and the Puget Sound Telephone Company. Representatives of the City of Everett were also present. The results of the investigation of these experts, as stated by the Department in findings of fact, were

"that a large number of the telechronometers, as installed at the Everett exchange of the Puget Sound Telephone Company, failed to function properly, either because of faulty manufacture, improper adjustment, lack of servicing or for other reasons undisclosed by the testimony and which the Department is unable to determine."[10]

Refunds to certain subscribers of part of the charges paid while telechronometers were in service were ordered by the Department.[11] Although the Department declared the telechronometer to be "scientifically sound in principle,"[12] it was believed that "this instrumentality, as installed and used in Everett, was not sufficiently perfected and proven to warrant us in ordering its installation as a measuring device."[13]

Proponents of the telechronometer system were not discouraged by the results of the Department's investigation. Their belief in the soundness of metered telephone service in principle, and their desire for a more thorough trial of the telechronometer resulted in the circulation of a petition among subscribers in the Everett exchange which requested the Department to order the Telephone Company to return to the "pay-for-what-you-use" basis of charge. To counter this move, opponents of the telechronometer system circulated a petition supporting the flat-rate principle of charge and denouncing metered rates.[14]

Both petitions were presented to the Department, and in the hearing subsequently held the advantages and disadvantages of the telechronometer system were exhaustively examined. This hearing culminated in the Department's

[6] *Ibid.*

[7] *Ibid.*, p. 598.

[8] *Ibid.*, p. 599.

[9] *Ibid.*

[10] *Ibid.*, p. 601.

[11] *Ibid.*, p. 602.

[12] *Ibid.*, p. 601.

[13] *Ibid.*

[14] The petition requesting a return to metered service carried the signatures of 3,880 customers of the system; the counter petition which favored flat rates had some 2,500 signatures. (*Patrons v. Puget Sound Telephone Company*, P. U. R. 1926 C 499.)

order directing the Telephone Company to re-establish measured rates on or before January 1, 1927, and to file its tariff accordingly.[15] The Department's findings of fact in this hearing are of real interest in the light of the previous checkered career of the telechronometer system in the Everett exchange. Furthermore, these findings were determined only after an *extensive* investigation, which seemed to give the results a high degree of validity.

The Department found:

(1) " . . . the telechronometer to be an instrument constructed on scientifically sound principles, which when properly manufactured, adjusted, and serviced, will measure the length of telephone conversation in units of time.
(2) "That the rates to be charged in the Everett rate area of the Puget Sound Telephone Company should rest upon *sound* and *economic principles*, namely, a *readiness to serve* and incoming call charge determined by party line classification and demand for service, together with an *outgoing service charge* based upon measurements in units of time. Such service should be paid for on a sliding scale of rates, based upon the quantity of service used.
(3) "That it appears feasible to inaugurate measured telephone service in the Everett rate area of the Puget Sound Telephone Company; that such metered service is desired by a *majority of the telephone users* in the city of Everett; that mutual benefits to the telephone company and its patrons should result from the inauguration of such service, and that such metered telephone service employing the telechronometer as a measuring device should be inaugurated in Everett.
(4) "That the Puget Sound Telephone Company has expressed its desire to install upon its telephone system, within the Everett rate area, the telechronometer system.

. . . .

(5) "That all the present residence services should be reclassified so that one-party residence lines will become two-party lines; two-party lines will become four-party; and four-party residence lines will become ten-party lines; . . . that patrons should be notified of such reclassification and given the option of returning to their original classification without charge if such desire is indicated within six months after measured telephone service is inaugurated.
(6) "That the Puget Sound Telephone Company's estimated loss in revenue resulting from reclassification [regrading downward] of its subscribers and losses of revenue resulting from the establishment of *half-rates* between the hours of 8 P. M. and 8 A. M. constitute hazards largely offset by the *establishment of lower minimum rates which will attract the unserved classes which the records in this case show to be estimated at twelve hundred unserved patrons now available*."[16] (Author's italics throughout the quotation.)

With the re-inauguration of telechronometer metered service in the Everett exchange January 1, 1927, it appeared as if measured rates were to have some degree of permanency and that the question of flat versus measured rates had been settled finally. Especially did this appear to be the case in the light of the favorable attitudes toward the telechronometer and measured rates shown by the Department of Public Works, the Telephone Company, and the majority of subscribers in the Everett telephone exchange. However, such expectations were not to be realized. On March 18, 1929, a hearing was held by the Department in response to a petition in protest against continuation of the telechronometer system and measured rates in the Everett exchange. [17] The Department in its decision of July 1, 1930, ordered the West Coast Telephone Company[18] to "discontinue the use of the telechronometer in Everett and vicinity

[15] *Patrons of Puget Sound Telephone Company v. West Coast Telephone Company*, P. U. R. 1930 D 272.

[16] *Patrons v. Puget Sound Telephone Company*, *supra*, n. 14 at 503-5.

[17] *Patrons of Puget Sound Telephone Company v. West Coast Telephone Company*, *supra* n. 15 at p. 273.

[18] On April 30, 1928, the Puget Sound Telephone Company was taken over by the West Coast Telephone Company, and the books of the former company were closed.

and remove the instruments and appliances from its telephone plant and return to flat-rate service under the rates, rules, and regulations in effect in 1926."[19] The Department further found that 90 days constituted a reasonable period in which to shift to flat-rate service.[20] In findings of fact, the Department reversed completely its previous position, as stated on March 31, 1926 and quoted in part above. The Department found:

"... that under the telechronometer operation, as compared to the former flat-rate service, a larger number of subscribers are paying a substantially larger sum, are making fewer calls, are talking for shorter periods of time, and that the telephone company is receiving less on its investment. The reduction or economy in plant investment claimed by the telechronometer interests is entirely theoretical and can be realized only in the distant future, if at all. The Department is of the opinion and finds that the telechronometer system is improper, inefficient, and unsuitable for use on the Everett telephone exchange."[21]

Furthermore, these findings of fact appear at direct variance with the facts found by F. Harper Craddock, Chief Engineer of the Department of Public Works, in his extensive investigation of the adequacy and economy of measured service as compared with flat-rate service in the Everett exchange. The report of F. Harper Craddock was submitted to the Department March 11, 1929. These data were available to the Department, therefore, in its decision of July 1, 1930. Engineer Craddock summarizes his findings as follows:

"The theory of measured telephone service is sound and the advantages from this standpoint make it desirable that the development be given a thorough trial to ascertain the practicability of the device used in measuring such service. *In practice, the telephone meters should incur enough saving in plant fixed charges to more than offset any additional expense caused by its installation.*

"The accuracy of telechronometer equipment is much more pronounced than at the time of its original installation. Most trouble has been eliminated and comparatively few complaints are being received by the Telephone Company. All meters are thoroughly tested before given to the Telephone Company and are again thoroughly tested after their installation. The pole changing equipment is inspected daily and carefully maintained.

"The number of calls placed through the Everett exchange has decreased from an average of approximately 55,000 [daily under flat rates] in 1926 to about 46,000 [under telechronometer measured rates] in 1928. The current consumption has decreased and *the load curve smoothed out over the day.*

"*The holding time of the utility's equipment has been considerably reduced* and at the same time the operator's holding time has been lessened. *Service, as a whole, has been improved.*

"*A large majority of both business and residential subscribers have had decreased billings during the period of measured service.*

. . . .

"The majority of the few residential subscribers interviewed expressed a desire that the meters be continued in service, while in the business class, a majority of those having higher bills desire to have the meters removed. *In all classes of service, the majority of subscribers believed that the meters were functioning correctly, that the service was better, that their bills had been reduced, and that their social privileges had not been curtailed to any great extent.*"[22] (Author's italics throughout the quotation.)

It is pertinent also to note that, after the taking of testimony in this case, the personnel of the Department of Public Works was entirely changed, and the decision was entered by the newly

[19] *Patrons of the Puget Sound Telephone Company v. West Coast Telephone Company*, *supra* n. 15 at 276.

[20] *Ibid.*

[21] *Ibid.*

[22] Craddock, F. Harper, Investigation of Measured Telephone Service in the Everett Exchange Area of the West Coast Telephone Company, *Report of the Chief Engineer*, Washington Department of Public Works, Cause No. 5896, March, 1929, pp. 154-56.

constituted Department July 1, 1930.[23] This may explain in part the changed attitude and the apparently illogical decision. The Department's seemingly complete disregard of facts brought out in previous hearings and by investigations of the Department's engineers also challenges the sufficiency and validity of this decision. In the appeal taken to the Superior Court by the American Telechronometer Company, the Court said:

> "This ruling would certainly permit consideration by the Department of the Craddock report, which was a part of the Department's own records and contained knowledge possessed by the Department as a result of its own investigation and it should have been considered by the Department.
>
> " . . . Without further extending this opinion, I may say that I have read the entire record and measured the findings and order of the Department thereby and without referring to all of the findings of the department complained of, I am convinced that many are not supported by the facts and are contrary to law; . . . that the Department as now constituted is opposed to the continuation of the telechronometer system in the Everett rate area [its order] is arbitrary and unjust in view of the record in this case."[24]

Upon the reversal of the Department's order by the Superior Court the Department appealed to the Supreme Court which found in favor of the appellant, entering judgment on September 18, 1931.[25] The Supreme Court in holding for the Department of Public Works overruled the respondent's (American Telechronometer Company) contention that the Department's order was not supported by the record. The Court simply stated that "the determination of such questions of fact should rest largely with the department,"[26] and apparently refused to inquire more closely into the facts or to entertain any question that the appellant may have acted in an arbitrary and unjust fashion. Such an attitude is difficult to understand, particularly in the light of the judgment of the lower court which, having considered the facts, found the Department to have ruled arbitrarily and unjustly. Subsequently, in the opinion, the Court said: "We have carefully examined the record in the case at bar for the purpose of determining whether or not the order [Department's] of July, 1930, is supported by the evidence, and we have reached the conclusion that it is so supported."[27] This statement appears to be irreconcilable with what the Court had previously said. With the Supreme Court unwilling to examine thoroughly the facts in the case, but instead accepting the Department's findings of July 1, 1930 as correct *per se*, the respondent could not hope to win. Other technical points upon which the Court ruled were decided in favor of the Department, and properly so, apparently. With this decision from the Supreme Court the Department's order of July 1, 1930 became effective, and the West Coast Telephone Company had 90 days in which to shift from telechronometer measured service to flat rates. The return to flat rates was made December 1, 1931, with the severance of the telechronometer system from the operating facilities of the exchange. The flat rates and classifications now in effect are those which were in use in 1926. Apparently, subscribers taking a lower grade of multi-party service than four-party under telechronom-

[23] American Telephone and Telegraph Company, Bulletin of Current Decisions, No. 3585, October 1, 1931, p. 3.

[24] Superior Court, Thurston County, State of Washington, No. 13443, Judgment entered December 1, 1930, Memo. opinion, p. 11, John M. Wilson, Judge.

[25] *State ex rel. American Telechronometer Co. v. Baker*, Advance Sheets Washington Decisions, vol. 64, no. 8, September 30, 1931, p. 410.

[26] *Ibid.*, at 421.

[27] *Ibid.*, at 422.

eter measured service were without classification, as the 1926 flat-rate schedule established four-party residence service as the lowest grade.[28] The West Coast Telephone Company, therefore, evidently was forced to reclassify and to regrade arbitrarily ten-party line subscribers to four-party line service.

What effect the change will have on the marginal subscribers as to their continued use of the service and through them on revenue and expenses and on subscriber attitude toward the Telephone Company remains to be seen. It seems probable, however, that service mutuality[29] will be rather substantially decreased as a result of higher rates to the multi-party marginal users; that the value of the service to other users, particularly business subscribers, will correspondingly diminish in consequence; that gross revenues will decrease with a less than proportional decrease in expenses; and that more or less subscriber hostility will develop against flat rates after experiencing the greater equity in differential pricing resulting from measured rates. The Telephone Company may find it necessary also to petition the Department for an increase in flat rates, which, if sanctioned and established, will serve to decrease further service mutuality and increase subscriber hostility to flat rates. The effects of this change in rates, coming as they do in the midst of an economic depression, will be intensified by existing economic conditions. The adjustment will thus be the more difficult for the Telephone Company and the subscribers.

At this time it appears that the experiment with telechronometer measured rates in Everett has ended finally. However, the American Telechronometer Company may possibly endeavor at some future time to re-install the system in Everett. Efforts in this direction, in all likelihood, will be held in abeyance until a more favorable attitude is manifested by the Department of Public Works. The present personnel of the Department does not regard the telechronometer system with favor, and such efforts, if made, will no doubt wait upon a change in personnel.

The Mechanics of the Telechronometer System

The essential principle of the telechronometer system is found in periodic reversals of the energizing current in the calling subscribers' lines. These reversals of line current are occasioned by the "pole changer," a mechanical device located in the central office which changes the polarity of the talking battery. Associated with the pole changer is a standard electrically-wound pendulum clock which is equipped with make-and-break contactors which transmit impulses regularly (e. g., 15- or 30-second intervals) to the valve-controlling pole changer solenoids. The solenoids are arranged to control the flow and exhaust of air compression in cylinders having pistons acting upon carbon pile rheostats. With pressure applied alternately to the two pairs of rheostats the paths through the Wheatstone bridge circuit shift with each reversal of the pole changer. Reversal of the line current is coincident with the establishment, or elimination, of current through one pair of rheostats. The sound of reversal, resembling a slight intaking of breath, is so slight as to be unnoticed by the average subscriber. The noise level of an ordinary line is sufficiently high to equal or cover the "breathing" noise occasioned by pole changer reversal of line

[28] *Patrons v. Puget Sound Telephone Company, supra* n. 14 at 505.

[29] Mutuality is a term used to connote the range or extent of telephonic intercommunication.

current. Each reversal of current produces a single movement of the meter located on the premises of the subscriber, thus resulting in progressive registration proportional to holding time. In Everett, current reversal occurred every 15 seconds from 8 A. M. to 8 P. M. and every 30 seconds during the period from 8 P. M. to 8 A. M. The longer interval at night effects a 50% reduction in rates for outgoing service at that time.

As the battery feed to the called subscribers' instruments is direct from the exchange battery, incoming service is given without meter registration. The battery feed to the cord circuits leads to the answering plugs, manual operation, or primary selectors, automatic operation, and through the pole changer, thus permitting registration of outgoing service in the manner described above.

The telechronometer subscriber-station meter is smaller than the typical gas or electric meter, but it has much the same general appearance. It contains a conventional set of dials with pointers geared to a driving ratchet, and has the capacity of recording in one complete cycle 40,000 units of measurement (termed "telos") of 15 seconds each, or 10,000 minutes of registered conversation or holding time (termed "telechrones").[30]

From this description of the telechronometer system the relative simplicity of its operation and mechanical features is apparent. The amount of equipment required is not large, and the cost compares favorably with service measurement costs of gas and electric utilities.

The Advantages of Measured Service

In the measurement and pricing of telephone service on the basis of holding time of the calling subscribers, certain important advantages over flat-rate and message-rate service are alleged to result. It is proposed to enumerate these advantages and to test them for their theoretical and practical validity in the light of the data available.

It is asserted that (1) the operating characteristics of the telephone utility are improved and the speed of service is increased because of quicker response by called subscribers; (2) multi-party service can be made less costly (more subscribers to a line) and more satisfactory and desirable to subscribers; (3) the length of conversation or subscriber holding time is reduced, thus eliminating in the main frivolous and trifling talk, while the number of "busies" is also reduced and privacy on party lines is insured because subscribers who listen in on originating call lines are charged for engaging in that pleasurable occupation; (4) the service capacity of the plant is increased; (5) not only are costs to subscribers apportioned in equitable correspondence with use of the service, but as a more refined unit of service is used, service pricing more closely approximates the theoretical ideal; (6) the cost of telephone service per subscriber is reduced, the need for rate increases resulting from natural growth is postponed, and the value of the service for the exchange as a whole is increased through increased service mutuality; and (7) a social and economic gain to the community arises through a larger number of people being afforded the means of instantaneous communication.

Operating Characteristics. The improvement of the operating characteristics—the first advantage cited—refers principally to improvements in the load curve through reduction of the peak and increase in off-peak usage (flattening of the curve), the decreased holding time of operators in manual exchanges, and

[30] Four telos equal one telechrone.

the decreased time of the operator's response to the calling subscriber after the lifting of the receiver. In a study of the operating characteristics of the Everett exchange under telechronometer measured rates as compared with flat rates, F. Harper Craddock found that the load curve flattened substantially under measured rates,[31] as revealed by the current consumption curves continuously recorded by the Company. Furthermore, the load curve continued to improve during the period subject to study (1926-28).[32] Not only were the peaks reduced substantially, but noticeable improvement was present in off-peak usage. The improvement in evening off-peak usage apparently was influenced largely by the 50% reduction in outgoing traffic charges for service between 8 P. M. and 8 A. M. In the study of operators' holding time, by means of recording charts and operator supervision, Mr. Craddock found a decrease of approximately 27% in 1927 as compared with 1926.[33] The 1926 average operator-holding-time under flat rates was 5.38 seconds, and the 1927 average under measured rates was 3.93 seconds.[34] This indicates a remarkable improvement in service so far as the overall holding time of operators is concerned. Several reasons are assignable for this phenomenal decrease. Inasmuch as subscribers' meters start registering the instant the operators respond to calls, speed in connection set-up would be insisted upon by subscribers. Not only were additional operators hired to secure more rapid service under measured rates,[35] but as measured service had resulted in a decreased number of calls per hour per operator each operator was required to handle fewer calls.[36] With less need for the holding and temporary storage of calls, faster service was possible.[37] The average length of time of operator response after the lifting of receivers by calling subscribers was ascertained to be slightly over two seconds.[38] This appears to be a very good average. However, an equally rapid response of operators obtained under flat rates as well as under measured rates.[39] As subscribers were not charged for the time consumed in operator response, it is not to be expected that operation under measured rates would necessarily show increased speed in this respect.

Increased Speed of Service. Concerning the alleged increase in speed of service through quicker response of the called subscribers, it may be said that measured service on the basis of holding time theoretically should influence the calling subscribers to abandon calls more quickly in the event the called parties are slow to respond, as they are charged for this interval of waiting.[40] From the point of view of the called subscribers, the knowledge that this interval of waiting is an element of cost to the calling subscriber and that failure to respond quickly to

[31] Craddock, *op. cit.*, pp. 44-47. See also Charts 3, 4, 5, 6, and 7, pp. 51-55.

[32] *Ibid.*

[33] *Ibid.*, p. 57.

[34] *Ibid.* See also Table 6, p. 66.

[35] *Ibid.*, p. 63.

[36] *Ibid.*

[37] "The maximum number of calls per operator per hour was 400 for the 1928 curve and approximately 450 for 1926. Four hundred and fifty calls per hour is about the speed of an average operator on a system of this type, although a fast operator can handle 600. A maximum of 700 calls per operator per hour has been maintained for four hours in an emergency." (Craddock, *op. cit.*, p. 63.)

[38] In one study the average amounted to 2.02 seconds, and in the other 2.12 seconds. (*Ibid.*, p. 59.)

[39] *Ibid.*, Chart 8, p. 71.

[40] Under telechronometer operation the calling subscriber is not charged while he is waiting for the operator to respond or for his connection to be set up under dial operation but, once the operator has answered or the connection has been set up, then he is charged for the interval during which the called party is being signalled.

the signal will result in call abandonment should energize the called subscribers to respond more speedily to the call. Complaints were made by some subscribers in the Everett exchange to the Department of Public Works that measured service had resulted in more rapid abandonment of calls and that subscribers were inconvenienced by the necessity of making a speedy response.[41] Upon investigation, however, it appeared that, although there had been a decrease in the average length of time required for the called subscriber to answer, the decrease was very slight.[42] The percentage of call abandonment increased approximately one-half of one per cent in 1927 in comparison with 1926.[43] Measured service was responsible, no doubt, for a large part of this increase. Unless measured service results in unreasonable haste in abandoning calls, when the called party fails in immediate response, improvement in service is secured. For subscribers to wait interminably on a line is to prevent other subscribers using the facilities. From the data it appears that a slight increase in the speed of the service was obtained. The increase in the percentage of unanswered calls is not sufficiently great to justify the conclusion that measured service made for undue haste in call abandonment. In summary, then, service measurement on the basis of holding time apparently does tend to improve the operating characteristics of the utility and to cause a slight increase in the rapidity with which subscribers respond to calls.

Effect on Multi-party Service. The assertion that multi-party service of a satisfactory character can be provided at less cost under this type of measured service appears to be correct when tested in the light of available data. Party-line service under flat rates has always been subject to more or less abuse from inconsiderate subscribers. For this reason multi-party service of a lower grade than four-party has been held to be objectionable and generally unsatisfactory to subscribers. Even four-party service is often subject to much interference and proves to be unacceptable to many subscribers. It is not unusual under flat rates for particular subscribers on multi-party residence service to tie up circuits and trunks for 15 minutes to half an hour, or even longer, in frivolous, desultory conversation. This not only affects the service on multi-party lines, but it impairs the quality of service for the entire system. Thus the party-line subscribers are not the only ones to suffer. In order to improve the quality of service where flat rates are effective, constant regrading upward is in order. The Bell System, therefore, believing in the desirability of unlimited residence service, looks forward to the gradual elimination of multi-party service with the ideal of individual-line service as the desirable goal. To the extent that this is achieved, higher ratios of capital investment per subscriber may be expected. With larger investments in equipment required for each subscriber, rates must rise proportionately to cover the larger outlay in fixed charges. Higher rates impose as a concomitant feature restriction on the extensive margin of service. Contraction rather than expansion—service curtailment rather than service universality—is the tendency.

[41] Brief of the Petitioners in Favor of the Telechronometer, before the Department of Public Works of Washington, Cause No. 5896, pp. 6-7.

[42] Craddock, *op. cit.*, pp. 57-58; Table 7, p. 67. The decrease was from .15 minute in 1926 to .139 minute in 1927, or .011 minute.

[43] *Ibid.*, p. 58; Table 8, p. 68. The percentage of unanswered calls to total calls placed was 3.43% in 1926 and 3.92% in 1927.

The theory upon which a lower cost multi-party service rests for its validity is the downward regrading of service—more subscribers to a line. This obviously would not be practicable if the quality of service were not improved to make it acceptable to subscribers. Four-party service may be regarded as the lowest grade of generally acceptable flat-rate service. Unless measured service on the basis of holding time would make equally acceptable still lower grades of multi-party service, satisfactory lower cost service could not be given. In the measurement of service in accordance with holding time, subscribers' message output theoretically would be affected in two ways: (1) the number of messages per subscriber would decrease through elimination of unnecessary calls, and (2) each call made would be of shorter duration. This restriction on subscriber use, if capable of practical realization, would perhaps make ten-party measured service comparable in quality to four-party flat-rate service. In the Everett exchange, with the re-establishment of measured service on a holding-time basis January 1, 1927, all service was regraded downward, one-party lines becoming two-party lines, two-party lines becoming four-party lines, and four-party lines becoming ten-party lines. Under flat rates four-party service was the lowest grade provided within the exchange.[44] Furthermore, no distinction was made between business and residence subscribers.

The practical effect of measured service upon subscriber calling rates was quite pronounced. In 1926 (under flat rates) the average number of calls per day was approximately 55,000.[45] In 1927 and 1928 (under measured rates) the average number of calls per day was reduced to 48,000 and 46,000 respectively.[46] These data suggest the conclusion that unnecessary calls were being eliminated in large part. The decrease in the calling rate of subscribers is particularly significant in the light of substantial net increases in the number of subscribers and stations in 1927 and 1928.[47] The net increase in the number of stations in 1927 over 1926 was 1,060; in subscribers, 696; percentage increases in one year of approximately 13% and 12% respectively. The corresponding increases in 1928 over 1927 were approximately 3% (307 stations), and 5½% (427 subscribers). Apparently, the effect of measured service upon extension of the service margin had been largely completed by 1928 with the phenomenal development in 1927. The development of 1928 was of a more normal character, probably caused by the natural growth of the exchange.

It also was said that metered service had resulted "in a new social consciousness."[48] The individual who habitually requested the free use of a neighbor's telephone tended to become unpopular; therefore, the practice largely disappeared.[49] Logically this should obtain (within limits), as subscribers who permit the service to be used by others now

[44] Ten-party suburban residence service was provided for the outlying areas.

[45] Craddock, *op. cit.*, p. 44.

[46] *Ibid.*, pp. 44-45.

[47] *Ibid.*, Table 16, p. 92.

	Everett Exchange	
	Average Number of Stations	Average Number of Subscribers
1925	7,719	6,482
1926	8,206	6,822
1927	9,266	7,518
1928	9,573	7,945

[48] Allen, Coburn, "Measuring Service in Units of Time", *Telephony*, April 23, 1927, p. 18.

[49] *Ibid.*

find that no longer can the courtesy be extended free of cost. The chronic borrower could no longer regard such requests as reasonable. Apparently a measure of relief was thus afforded telephone subscribers and the telephone utility from this uneconomic and non-revenue-producing use which is always present to a greater or lesser degree under flat rates.

The effect of measured service upon the average holding time per call was likewise substantial. The average length of holding time per call was 1.44 minutes in 1926 and .99 minute in 1927;[50] a reduction of almost one-half minute.

By reason of the restriction in subscriber use which was accomplished through measured service there is no question but that multi-party service was of a higher quality, and thus more acceptable to subscribers. The extent to which ten-party service under measured rates was comparable in quality to four-party service under flat rates is difficult to ascertain.[51] However, ten-party service did prove highly acceptable to subscribers as is indicated by the heavy concentration on this grade of service in comparison with the other grades.[52] It may be said in qualification that because of incomplete line fills[53] many ten-party line subscribers were actually getting a higher grade of service than would be indicated by the classification.[54] This was true also of four-party service in 1926 with a computed line fill of 2.64 prior to the establishment of measured service.[55]

Subscribers' Bills. A comparison of subscribers' bills under measured service with the charges which would have been assessed under the 1926 flat rates (and classifications) revealed that 76.3% of the business subscribers and 80.6% of the residence subscribers received decreased billings.[56] Under measured service the average net revenue per residence subscriber per month was $1.82, per business subscriber, $6.26, and per subscriber for the entire exchange, $2.56.[57] That multi-party service under measured rates (holding time) can be made less costly and of a more satisfactory and desirable character appears to be a conclusion warranted by the facts.

Reduction of Uneconomic Use. The advantage claimed for measured service—namely, that the holding time of subscribers is reduced, thus eliminating frivolous and trifling talk—has already been mentioned. There is little doubt but that conversations of this character,

[50] Craddock, *op. cit.*, p. 57. See Table 4, p. 64.

[51] Coburn Allen, Commercial Superintendent, Puget Sound Telephone Company, who was in a position to evaluate the relative qualities of ten-party measured service and four-party flat-rate service states:

"Party-line service has been made acceptable. Perhaps nowhere in the world is service so instantaneous. A ten-party line at Everett is now a better service than that formerly furnished as four. The busy line, which interferes with the completion of a call, will on an average be available for service in less than one minute.

"Of the 4,360 four-party *residence* subscribers which became ten-party subscribers automatically, as of January 1, 1927, only nine have requested a return to four-party service. On the other hand, 32 subscribers (mostly business) have requested a change from four to ten-party service." (Allen, *op. cit.*, p. 17.)

[52] Craddock, *op. cit.*, Table 34, p. 144.

	Everett Exchange—October 23, 1928		
	Lines	Subscribers	Fill
Trunks and auxiliary lines	(164)	....	....
Main (single) lines	697	697	1.00
Two-party lines	270	321	1.19
Four-party lines	210	380	1.81
Ten-party lines	1,664	5,292	3.18
Ten-party suburban lines	176	1,358	7.72
Total System	3,017	8,048	2.67

[53] The term "line fill" denotes the ratio of actual subscribers per line to subscriber line capacity.

[54] Craddock, *op. cit.*, Table 34, p. 144.

[55] *Ibid.*, p. 139. See Table 35, p. 146.

[56] *Ibid.*, Charts 10 and 11, pp. 87-88.

[57] *Ibid.*, Table 13, p. 85.

which have so little utility to the beneficiaries that a very low traffic or output charge will not be borne, will continue to encumber the telephone system under measured rates based on holding time. Substantial reductions in the average holding time of call and in calling rates, which have taken place where this type of measured service has been tried, suggest that the conversations subject to curtailment are in large part of frivolous and trifling character. Since such calls apparently have the least relative utility to subscribers, they quickly tend to become submarginal with the imposition of an output charge.

Increased Privacy. Privacy on party lines adds much to the quality of multi-party service and to its acceptability by subscribers. In the operation of telechronometer measured service in Everett, a subscriber taking down his receiver to listen in on an out-going call line would cause meter registration proportionate to the time the surreptitious pleasure lasted. Obviously, the effect would be to check considerably this obnoxious activity common to party-line subscribers. It is said of patrons of the Everett exchange that they did not "listen in because they have learned that it costs."[58]

Reduction of Busies. No data are available on the percentage of "busies" under measured as compared with flat-rate service, but from the reduction of calling rates and holding time it would be logical theoretically to expect less service delay on this account. With fewer calls per subscriber there would be less loading of lines, and with the busy line available for service in less than one minute on an average under measured rates, lines should be readily available to subscribers. A high average holding time per call and a high calling rate per subscriber are the factors responsible for a poor quality of service caused by a high percentage of busies in an exchange. A decrease in either one or both of these elements will tend to decrease the number of busies and in that respect improve the quality of service. As both of these factors decreased substantially under measured rates as compared with flat rates in the Everett exchange, it may be reasonably supposed that the percentage of busies to total calls likewise decreased.

Increased Service Capacity. It logically and necessarily follows that the provision of acceptable lower grades of multi-party service (more subscribers per line) will increase the service capacity of the plant. Multi-party line service means a substantially lower ratio of capital or equipment per subscriber than does individual line service. The increase in service capacity of a given quantity of plant equipment depends not only on the relative extent of multi-party service in comparison with individual line service, but upon the grades of multi-party service provided. In the Everett exchange the transition from flat rates to measured rates with the subsequent downward regrading of subscribers "more than doubled the number of persons"[59] who could be served with the existing equipment. The "outside plant, switchboard and housing facilities"[60] were found to have their service capacity so greatly increased as "to take care of the growth of Everett for many years,"[61] and rates were lowered as a result of this increase in service capacity with its partial utilization.[62] Thus the need for additional capital outlays and rate increases (which apparently would have been necessary)

[58] Allen, *op. cit.*, p. 17.
[59] *Ibid.*, p. 18.
[60] *Ibid.*, p. 18.
[61] *Ibid.*
[62] *Ibid.*

was avoided. While service pricing on a holding-time basis does tend to increase substantially the service capacity of the plant, it is not to be expected that savings will be realized or rates lowered, unless the increased capacity can be utilized. Obviously, the surplus or excess capacity present under measured rates, the provision of which was necessary under flat rates, is not deductible from the rate-base. Savings thus wait upon the addition of new subscribers who can be served without causing any appreciable increase in fixed charges. The full economic gain to subscribers will not be realized, therefore, until full utilization of the extensive margin of existing plant capacity takes place.

Equitable Distribution of Costs. The assertion that costs to subscribers are apportioned in equitable correspondence with use of the service is *prima facie* correct if use is defined in terms of holding time, as each subscriber contributes revenue in proportion to his recorded holding time. However, there are other aspects and elements in use measurement than simply holding time. The quantity of facilities placed at the disposal of the subscribers and the time of day of call may be regarded as significant elements in pricing service on a use basis. Stated in other words, the factors of distance of call and the time of day of use theoretically must be given consideration. The distance factor is of particular importance in large multi-office exchanges where calls must be trunked between central offices. In a small single-office exchange where trunking is not required, the distance factor may be disregarded without material inequities in differential pricing. In pricing service on a use basis in the larger exchanges, weight must be accorded the distance factor (e. g., through zoning), if equitable differential rates are to obtain. The time of day of use is likewise important because of the need of providing plant facilities (e. g., central office equipment, inter-office trunks, operators, etc.) sufficient to meet the peak demand. In the larger communities where transmission facilities of higher quality are required, where expensive underground circuits must be provided, and where call transmission is over relatively greater distances (which requires the provision of expensive trunking facilities), the time of day of call is clearly related to service usage in terms of the facilities which must be provided. Heavy concentration of calls at a peak period, resulting in an abnormally high peak, would require the provision of a larger capital investment in plant facilities than if the peak were not abnormally high and service usage were more constant and even. Less investment per call would be required in the latter instance than in the former. Inter-exchange or toll service in which the investment per call is large illustrates the importance of the time of day of call as a factor in determining relative use of service. With subscribers contributing to revenues in proportion to holding time, greater equity obtains, nevertheless, in differential exchange service pricing (on a use basis) than under message-rate or flat-rate bases.

Ideal Basis. It is alleged also that service pricing on the basis of subscriber holding time more closely approximates the theoretical ideal, as a more refined unit of service is used. In pricing service on a use basis flat rates clearly are highly inequitable. Little need be said as this is obvious to the most casual observer. Message-rate pricing is an attempt to charge for the service in some reasonable proportion to service use, and to the extent that the message rather than the facility—the substation—is selected as a unit of service consump-

tion more equitable differential rates obtain. Other factors theoretically may not be disregarded, however, in the proper measurement of service usage. The holding time of the message, the distance over which the message is transported which becomes more important as the exchange increases in size, and the time of day of call are factors of significance. When it is recognized that the telephone utility is providing message transmission rather than substations, the importance of these factors is apparent.[63] Theoretically, with service pricing on a use basis, a unit of service which gives due weight to these several factors should be selected if the interests of equity are to be served. The message alone as a unit of service accords no weight to these factors. Holding time as an element in service usage appears to be of at least equal importance with the call or message in exchange service pricing. With the measurement of telephone service in units of holding time, the unit of service becomes the message- or call-minute. The call-minute seems clearly to be a more equitable unit and to approximate more closely the theoretical ideal for service pricing on a *use* basis than the call or message.[64]

Conditions Necessary for Securing Advantages of the Telechronometer

Cost of Service Reduced. The contention that the cost of telephone service per subscriber can be reduced with service pricing on a holding-time basis has been discussed, in part, in connection with the other advantages. The validity of this contention depends upon the possibility of regrading the subscribers downward, which in turn is dependent upon the successful restriction of uneconomic message output and the more rapid release of plant facilities by subscribers in message intercommunication. In the Everett exchange regrading downward of subscribers apparently was accomplished successfully. With capacity to serve more subscribers without any material increase in capital investment, the addition of more subscribers to the system resulted in less investment per subscriber, which made possible a reduction in the cost of telephone service per subscriber.[65] Reduction in subscriber cost under such circumstances, however, would be realized only when the unutilized capacity already provided was brought into use by the addition of new subscribers.

Rate Increases Postponed. The contention that rate increases need not parallel natural exchange growth rests on the assumption of a prior system of flat rates with corresponding provision of plant capacity in excess of that needed to serve the same number of subscribers under measured rates on a holding-time basis. With the shift from flat to measured rates, the excess capacity then present would serve, quite naturally, to

[63] "A telephone company does not sell a physical product as do other utilities. It does not deliver any commodity comparable to electric energy, steam, water, or gas. Service alone is furnished; or, better stated, service is made available." (*Re New York Telephone Company*, P. U. R. 1923 B 545 at 635.)

[64] With measurement of service in terms of the call-minute, weight may be accorded the elements of time of day of call and distance by increasing the holding time per unit during the off-peak period as compared with the peak period (e. g., increasing holding time per unit from one to two minutes from 8 P. M. to 8 A. M. in the Everett exchange) in the case of the former and by zoning the exchange and charging tolls between non-contiguous zones (e. g., New York City) in the case of the latter.

[65] "The telephone company [in Everett] has enlarged its sources of revenue, while at the same time it has reduced the total amount which it must receive from its old subscribers. That is to say, those who received service under flat rates, are now paying, as a whole, less than they formerly paid; and this difference is being made up by the 1,300 new stations which have been added since the first of the year." (Allen, *op. cit.*, pp. 17-18.)

take care of the natural growth in the exchange to the point of full utilization without the necessity of any substantial amount of additional plant investment. With but little increase in fixed charges and operating expenses, more complete utilization of plant facilities would reduce the cost per subscriber, and rates could even be lowered rather than raised. This was the experience in the Everett exchange.[66] Upon reaching the point of full utilization of plant, further natural growth in the exchange would require the provision of additional facilities with the apparent necessity for rate increases. Because of the lower ratio of capital investment per subscriber under measured rates as compared with flat rates, the rate increases would not need to be as large nor would they probably need to be so frequent. To the extent, therefore, that an exchange is overbuilt for this type of measured service, the transition to measured rates would postpone for some time the need for additional capital outlays, and hence the possible need for rate increases.

Value of Service Increased. Another alleged advantage is that the value of the service for the subscribers as a whole is increased through increased service mutuality. The reduction in service costs per subscriber, it is asserted, results in an increase in the value of the service for the exchange as a whole. With the pushing outward of the extensive margin of service which is substantially affected and furthered by rate reductions, the range or spread of possible and actual intercommunication is increased. It logically follows that with an increase in the range of telephone service—a larger number of people available—the utility of the telephone as a communicating device becomes greater.[67] The value of the service to subscribers, in so far as it is dependent upon service utility, is thus enhanced. After the exchange has reached a certain size, or certain subscribers have been added, it does not always follow, however, that the addition of more subscribers will increase the value of the service to any particular subscriber. In certain instances, residential subscribers having a rather limited and clearly defined group within which intercommunication takes place are often little affected by an increase in service mutuality. The utility of the service, therefore, may not be increased. For business subscribers and residential subscribers generally, an increase in service mutuality (within limits) tends to result in an increase in service utility and thus in service value.[68]

Increased Usefulness. Another important advantage which is claimed for measured rates is the social and economic gain to the community in consequence of a larger number of people being afforded the means of instantaneous communication. Facts previously presented support the contention that a larger number of people can avail themselves of telephone service by reason of lower rates under measured service. With a larger number of people placed in closer contact through the medium of the telephone, there is a net social gain from the

[66] "We have more than doubled the number of persons who can be served with our [existing] equipment. The present outside plant, switchboard and housing facilities are now sufficient to take care of the growth of Everett for many years. Therefore we have not only avoided the need for an increase in rates, but we have actually lowered them." (Allen, *op. cit.*, p. 18.)

[67] The value of telephone service "depends on the number of other individuals with whom a subscriber can communicate. The interdependence of service, the fact that there must be two parties to every telephone conversation, leads to a recognition of the principle that the fullest usefulness and greatest value of telephone service is had when the largest number of subscribers are served." (*Re New York Telephone Company*, P. U. R. 1923 B 635.)

[68] "The value of the telephone [in the Everett exchange] has been increased since more people may be reached over it." (Allen, *op. cit.*, p. 17.)

facilitation and fuller development of social and business intercourse. This gain is by no means inconsiderable.

Conclusion

From the preceding discussion of the alleged advantages of service measurement and pricing of telephone service on a holding-time basis, the general conclusion seems warranted that the advantages are valid in substance. Measured rates based on holding time thus appear (within limits) to be more equitable, more promotional (in reference to the extensive margin), more stable, and more scientific than flat or message rates. However, it should not be inferred that there are no disadvantages to the use of telechronometer measured rates. The technical equipment required to measure subscriber holding time and the periodic meter readings add to the total cost of rendering service. More or less subscriber dissatisfaction because of service pricing on a holding-time basis is to be expected. Many subscribers will no doubt object to any attempt to curtail use, regardless of the desirability of such curtailment. Furthermore, it should be emphasized that, while service pricing on a call-minute basis appears to have decided advantages over flat- or message-rate bases, it does not meet fully the theoretical requirements of scientific pricing on a *use* basis.

In the light of the advantages it is to be hoped that telechronometer measured service is subject to further experimentation and use. The experiment in the Everett exchange, politics excluded, appears to have been economically a success. New techniques and policies in intra-exchange service pricing of a more scientific character are to be commended as constituting a trend in the right direction. The outlook for the telechronometer system of measured service is not encouraging, first, because of the unfavorable publicity, apparently largely unjustified, which has attended the Everett experiment, and second, because of the attitude and policy of the American Telephone and Telegraph Company which evidently does not regard with favor the employment of equipment in the Bell System telephone exchanges, the patents of which are not owned or controlled by the above corporation.

Various reasons have been advanced which may explain the policy of the Bell System in part. Apparently there is a dislike on the part of the Bell System to pay royalties to independent companies for the use of equipment. Furthermore, a substantial income is received from the Western Electric Company's function as the manufacturing and purchasing subsidiary of the American Telephone and Telegraph Company.[69] This income apparently would be substantially impaired if the telechronometer system were adopted, first, by the reduced ratio of plant investment per subscriber which would mean a future reduction in the quantity of equipment required, and second, by the overexpanded character of the exchanges of the Bell System under telechronometer measured rates. Until the time of full utilization of plant the manufacturing and purchasing activities of the Western Electric Company would be greatly curtailed. The full utilization of existing plant might require a period as long as 10 years. There is also the matter of the loss in

[69] The Western Electric Company performs two essential functions for the Bell System by manufacturing practically all telephone equipment used by the System and by acting as general distributing agent for supplies which it manufactures or purchases for the associated companies. Closely associated with the functions of manufacture and distribution are the two related activities of plant engineering and installation.

earnings to the Bell System inherent in the "cost plus" rule of regulatory bodies which allows—to illustrate—an 8% return on plant valuations based on used and useful elements whose cost in the plant is financed on a 6% basis.

It is urged, on the other hand, that, whereas the flat-rate system, or even the message-rate system, fails to afford rates which will extend telephone service into the present unserved classes estimated at approximately 40% of city residences and 10% of business establishments, the telechronometer system which provides satisfactory lower-grade, multi-party service would place the telephone within the economic means of the unserved classes. The objective of the Bell System—universal telephone service—would, therefore, be realized to a far greater degree. With universal telephone service in a community sense in a large measure an accomplished fact (rather than as a distant, unattainable objective under prevailing flat- and message-rate systems), improved public relations for the industry and a net social and economic gain to society would result. Rate schedule adjustments could be made currently by one-mill changes in the charge per unit of service without affecting public relations adversely.[70] The decrease in the revenues of the Western Electric Company (previously referred to) would be offset, to some extent, by the increased revenues from telephone instrument sales. Lastly, in times of business depression with revenues to some degree consonant with business conditions, the relatively decreased ratio of plant investment per subscriber, or the smaller plant dollar ratio to subscriber revenue dollar, would represent decidedly less "frozen" capital investment.

[70] In illustration, see the telechronometer rate schedules previously in use in the Everett, Washington, telephone exchange in P. U. R. 1926 C 504.

Bonds of Maintenance as Aids in Acquiring Farm Ownership

By CARL F. WEHRWEIN

AN interesting legal document many times found in eastern Wisconsin, and perhaps also in other localities, is the bond of maintenance or "support". It is a special means of transferring the title to farm land, but is confined to close relatives, usually a father and son or son-in-law. It acts as an aid in acquiring farm ownership. Hence, it displaces tenancy to some extent, but exactly how much is uncertain. In its most common form it provides that in consideration of the deed transferring the land, the "bounden" is to support the other parties during the remainder of their lives according to specified conditions, and to make certain cash payments to other heirs, if there are any. Hence, such a bond is not only a special type of farm sale contract, but is also a sort of will. Many times the bounden is also required to support one or more minor heirs until they have reached a certain age. A penalty, secured by a mortgage on the farm, is provided in case of non-fulfillment.

Bonds of maintenance originated in Central Europe and were brought to the United States by immigrants from those regions. Their use in this country, however, is not confined to those immigrants and their descendants. Because of inter-racial contact, they have also to a small extent been adopted by groups to which they had formerly been unknown. Such bonds will scarcely be found where the amount of property involved is very small or is in a form other than land. Hence, they are not known to be prevalent in England, Ireland, and other countries where the percentage of farm tenancy is high, where merely the right to lease land, not the title to it, descends from one generation to the next, and where the other wealth bequeathed, if any, is in other forms.

The Nature of Bonds of Maintenance

The object of this type of farm sale contract obviously is twofold. On one hand, it enables the purchaser to buy the farm without the use of outside credit, his share of the estate being equivalent to the down payment, and to pay for it on the installment plan on a long-term basis. On the other hand, it enables the sellers to draw upon their equity in the farm for their daily needs; i. e., be assured of the means of support for the balance of their lives, while still leaving something for other heirs.

It is hard to determine whether the bond is more important than the deed, or the deed more important than the bond. In view of the wording of the two instruments as ordinarily written, the deed is the more fundamental document, and the bond is built upon it, since the deed is an ordinary one, and says nothing about the bond, while the bond expressly states that it is executed in consideration of the deed. Hence, the bond can be nullified without disturbing the effect of the deed, but the deed cannot be revoked without also voiding the bond. On the other hand, if the terms of the bond are adhered to, its comprehensive and significant provisions will have been the controlling factors in the transfer of the land involved. So the relative importance of the two instru-

ments is probably dependent upon the ultimate success or failure of the bond. The bond is secured by a mortgage but, in this comparison, the mortgage may be ignored since, even if there were no bond, the mortgage would still exist.

Broadly speaking there are two classes of bonds. The first is that under which the bounden is required to discharge his obligations to the sellers by directly supporting them; i. e., by providing them with the various necessities of life which the farm affords, and a small amount of cash, at intervals, with which they may purchase their other necessities; ordinarily provision is made for both families to live in the farm house. Under the second type of bond the bounden pays for the farm entirely in cash in installments.

The first type has been by far the most numerous, although in later years the proportion of the second type has been increasing. There are many variations of the first type. For example, a bond, instead of requiring the bounden to deliver the various articles of food needed by the sellers, may provide that all eat at the same table. In addition, there are combinations of the two types. For example, a bond may list all the provisions of the first type, but also state that, if such an arrangement does not prove mutually satisfactory, the sellers may live elsewhere and the bounden is then to discharge his obligations to them entirely in cash, also in installments. Another combination specifies money payments in lieu only of the articles of food, but lists all the other usual goods and services. An actual bond, illustrating the first type, follows.

A Bond of Maintenance

"KNOW ALL MEN BY THESE PRESENTS, THAT I, Henry Schuler[1] of the Town of............, ... County, State of Wisconsin, am held and firmly bound unto John Schuler and Mary Schuler, his wife, of the same town, county and state, in the penal sum of Four Thousand Dollars ($4,000.00), good and lawful money of the United States of America, to be paid to the said John Schuler and Mary Schuler, his wife, for which payment well and truly to be made I bind myself, my heirs, executors and administrators and each and every one of them firmly by these presents.

"Sealed with our seals and dated this 21st day of April, A. D. 1919.

"The conditions of this obligation are such that whereas, the said John Schuler and Mary Schuler, his wife, have deeded to the said Henry Schuler by warranty deed bearing date of the 21st of April, A. D. 1919, the following described real estate lying and being in the County of.................., State of Wisconsin, to wit: [Description of the property is inserted here.]

"Now for and in consideration of the said conveyance to the said bounden, the receipt whereof is hereby acknowledged and confessed, the said above named bounden does hereby promise and agree that he will pay to the said John Schuler and Mary Schuler, his wife, during their natural lifetime, annually the sum of Ninety-six Dollars ($96.00) the first payment of Eight Dollars ($8.00) to be made upon the ensealing and delivery of this bond, and Eight Dollars ($8.00) to be paid monthly thereafter.

"The above named bounden shall also deliver to the said John Schuler and Mary Schuler, his wife, during their natural lifetime, in December of each year, one dressed hog of 175 to 200 pounds in weight, and one quarter of beef of at least 100 pounds in weight; in October of each year, 15 bushels of potatoes; annually, two barrels of wheat flour; and daily, one quart of milk. The above named bounden shall also furnish all the necessary firewood which the said John Schuler and Mary Schuler, his wife, will need during their natural lifetime, the said bounden to get the said firewood ready for the stove.

"The said John Schuler and Mary Schuler, his wife, reserve for themselves the south half of the dwelling house now situated on the said premises, the said south half including cellar room, two rooms on the first floor and two rooms on the second floor. In

[1] The proper names herein, except that of the state, are assumed.

case said rooms or dwelling house will be destroyed by fire or other causes, then the above named bounden shall replace them with as good or better rooms.

"The said John Schuler and Mary Schuler, his wife, further reserve for themselves one-quarter of an acre of land on the said premises near the said dwelling house, which land shall be properly manured and tilled by the above named bounden annually for garden purposes, and the said John Schuler and Mary Schuler, his wife, shall be entitled to one-fourth of the fruit produced on the said premises conveyed to the above named bounden.

"The said Henry Schuler shall furnish the said John Schuler and Mary Schuler, his wife, with a safe and reliable horse and buggy or cutter at any time they may desire the same, except during seeding or harvesting time.

"The above named bounden shall also do the washing and mending for the said John Schuler and Mary Schuler, his wife, if they are not able to do it themselves, and shall also give the necessary care to the said John Schuler and Mary Schuler, his wife, in case of illness, and summon a physician at their request, but the physician's bill shall be paid by the said John and Mary Schuler, his wife.

"The said John Schuler and Mary Schuler his wife, reserve the right to go to and from all buildings on the said described premises, and shall have free and unhindered use of the well and cistern on the said property.

"In case of the death of the said John Schuler and Mary Schuler, his wife, the above named bounden shall give them a decent burial and pay all the funeral expenses.

"The above named bounden shall pay to Albert Schuler two years after the death of the said John Schuler and Mary Schuler, his wife, Five Hundred Dollars ($500.00), without interest; to William Schuler three years after the death of the said John Schuler and Mary Schuler, his wife, One Hundred Dollars ($100.00), without interest; to Carl Schuler four years after the death of the said John Schuler and Mary Schuler, his wife, One Hundred Dollars ($100.00), without interest; to Anna Schneider, nee Schuler, five years after the death of the said John Schuler and Mary Schuler, his wife, One Hundred Dollars ($100.00), without interest; to the children of Ida Schultz, nee Schuler, deceased, namely, Erwin Schultz, Otto Schultz and Richard Schultz, One Hundred Dollars ($100.00) without interest, each to receive one-third of the said amount when he has reached the age of twenty-one (21) years.

"If all the conditions of this bond are fully performed, then this obligation shall be void and of no effect, otherwise, it shall remain and be in full force and effect.

"In Witness Whereof, I have hereunto set my hand and seal on the day and year first above written.

Henry Schuler (Seal)

"In presence of:
William C. Zimmerman
George A. Allen

An attorney usually writes the bond, which, after being notarized, is recorded in the office of the register of deeds.

Analysis of Sample Bonds

In an effort to determine the degree of success which bonds of maintenance have attained for the purpose for which they were intended, the writer made a somewhat detailed study of the bonds written in a typical town of Manitowoc County, Wisconsin, during the period 1860-1928.[2] This county borders Lake Michigan, and lies about 70 miles north of the city of Milwaukee. The town selected is Newton, which was settled between 1847 and 1860. About 75% of the people are of German descent, about 15% are Polish, and 4.5% are Irish. The remainder consists of a few Norwegians, Bohemians, Russians, and Scotchmen. The population is very stable, ⅔ of the present inhabitants having been born there. Dairying is the main type of farming. Farm tenancy is low, only 4.5% in 1927.

A summary of each bond that has been written in this town, as recorded in the office of the Register of Deeds of Manitowoc County, was set down, and

[2] There were no bonds written prior to 1860.

in addition, the detailed histories of a considerable number of them, one from each of 32 sections of the 36 in the town and representative of the different parts of the period of time covered in this survey were obtained. The former information was useful in gaining an accurate conception of the provisions of the different types of bonds, and the latter reveals the degree of success the bonds have attained. The 32 bonds were all of the first type, except when otherwise stated. The histories were obtained from attorneys who wrote the bonds and who were called upon when trouble occurred, or otherwise were in touch with the parties involved while the bonds were in force. The general opinions of these and other attorneys and of probate judges and registers of deeds as to such bonds were also secured.

In addition, a brief, general survey was made in the counties that surround Manitowoc County—namely, Kewaunee, Brown, Calumet and Sheboygan Counties. The bonds examined in the town of Newton were compared with representative ones recorded in the other counties, and attorneys and others there were also interviewed as to the degree of success bonds have had in their their respective counties, and general opinions of bonds obtained.

To show how successful bonds have been, the writer need merely quote his notes on the histories of the bonds selected for individual study in the town of Newton. A bond was considered a failure if there was long continued (i. e., more than occasional) trouble and quarreling, irrespective of whether or not the mortgage was foreclosed and the land changed hands. Such quarreling alone makes another arrangement more desirable.

The History of Individual Bonds

Bond No. 1. This bond has an unusual history. The original bounden was a son. He, however, later transferred the land to his daughter and son-in-law and indorsed the bond and mortgage to them. Trouble developed over minor provisions of the bond between the original owners and their granddaughter. Her husband was not involved. Court action was avoided while the younger man lived, but when he died his widow promptly evicted her grandparents. They brought suit and the court upheld them. This bond, therefore, was a failure.

Bond No. 2. There was much trouble here, the former owners alleging that the bounden had not complied with the terms of the bond, especially those respecting the cash payments. Suit was brought, but the matter was settled out of court. This bond, nevertheless, was a failure.

Bond No. 3. This bond was a complete failure. The previous owners accused the bounden of gross non-compliance with the requirements of the bond, sued him, and were upheld. When the bounden failed to pay the penalty, the mortgage was foreclosed and the land reverted to the original owners.

Bond No. 4. Much quarreling occurred over minor provisions of the bond, and the bounden finally purchased the release of the bond. The bond was unsuccessful.

Bond No. 5. There was much trouble here also. The older people were hard to get along with, and the bounden refused to discharge his obligations to them, other relatives also becoming involved. Legal recourse was not had, but this was positively an unsuccessful bond.

Bond No. 6. Trouble and ill feeling occurred here continually, the bounden

being accused of gross non-compliance with his obligations. Though the matter was never taken into court, the bond must be adjudged unsuccessful.

Bond No. 7. The bounden, a son-in-law, had differences with the older people, and the latter moved away under an alternative arrangement provided for in the bond, after which no further trouble was experienced. This bond must be adjudged successful. The alternative arrangement here is significant, for it rendered the bond successful whereas without it the bond might have been a failure.

Bond No. 8. The former owners died very soon after the agreement was entered into, and there was no trouble. Technically this bond was successful, but it is really not representative.

Bond No. 9. The circumstances here were the same as in Bond No. 8.

Bond No. 10. This bond was successful, but since the bounden was merely dealing with his mother, his father being dead, and the bounden never married, this is also not a typical case.

Bond No. 11. Under this bond the bounden was obligated merely to make periodical cash payments to the previous owners, and the latter could live where and how they pleased. This was the shortest and simplest bond found. Because of these factors, it was successful. It could have been unsuccessful only if the bounden had failed to make his cash payments.

The remaining bonds, 21 in number, were all successful, as there was little or no known trouble.

Thus six of the 32 bonds (18.8%) were definitely unsuccessful. This is not a high percentage. However, three of the successful bonds must be ruled out because the circumstances involved were not typical. In addition, we must recognize the fact that these six unsuccessful bonds are merely those of which notice about trouble came to the attorneys questioned. There may have been much trouble in connection with some of the other bonds, but information concerning them did not get out of the immediate neighborhood, or perhaps even the immediate families.

The experience with bonds in the other counties appears to have been about the same. The bonds in these other areas are similar to those of the town of Newton, except in Kewaunee County where a higher percentage of the agreements seem to specify cash payments only. The degree of success, according to the opinions of the attorneys, probate judges, and registers of deeds interviewed, has been about the same.

Opinions concerning Bonds of Maintenance

There was great unanimity among the people questioned in the five counties included in the survey in the feeling that, while the bonds of maintenance of the first type may at one time have fitted rather well into the then existing situation, continuance of their use is inadvisable. Only one attorney spoke for them, saying there need not be any trouble if the bonds are properly written. He is, of course, correct in implying that a bond written with an eye to setting up all possible safeguards against disagreement and friction is less likely to result in trouble than one carelessly drawn. However, we need not consider bonds known to be poorly drawn. Our task is to pass judgment upon instruments so planned and worded as to have the best chances of success. The opinions of the people interviewed were, of

course, based upon bonds of which they had knowledge, and some of these were poorly drawn. However, they were not all poorly drawn, and therefore the lack of success noted was certainly not in all cases caused by careless drafting.

The consensus is that there are too many small provisions in the ordinary bonds which, in the intimate day-to-day life of the parties involved, lend themselves easily to violation. As one probate judge aptly put it, "Too much depends on good will." It is highly probable, therefore, that, given good will, a bond is unnecessary and an apparently successful bond plays but an insignificant role in the harmonious life of the two families. On the other hand, if good will is absent and a bond forces the people to live together, it may do more harm than good. Thus, even though the percentage of the bonds known to be unsuccessful is not high, the general attitude toward agreements of this type as expressed by the people interviewed is unfavorable.

In other words, bonds of maintenance, particularly those of the first type, do not seem today to fit well into American conditions. The bonds are most useful where farming is of the hand-to-mouth type, and it is perhaps impossible for a farm owner during his lifetime to accumulate more wealth than is represented by a farm of low value. Hence, under such unfavorable conditions when a man and his wife turn their farm over to a son or son-in-law, receiving no cash down payment, the purchaser's income would be so low that he would not be able to pay them enough in cash, in the form of interest and part of the principal, to sustain them if they should move from the farm. In such a case it would be necessary for the original owners either to purchase or rent living quarters and buy all their other necessities at a profit to the seller. In fact, the son or son-in-law would very probably not even be able to pay the usual rate of interest. (Note that in the bond reproduced above the payments to be made to the other heirs do not bear interest.) If the old people live elsewhere and the new owner would perhaps be able to pay them enough to supply all their needs, the other heirs would not get anything. The situation would scarcely be better if the purchaser were to borrow the money elsewhere and pay the previous owners, since he would then also be unable to carry the debt and, while the old people, living at some other place, could satisfy their immediate needs, there would be but little, if anything, left for the other heirs. Thus, if the two families live together on the old farm, they will save the amount which would otherwise go for the purchase or lease of a building, and the profit which would go to the grocer, the butcher, and so on. Incidentally, the older people can be of considerable assistance to the young owners, and the familiar surroundings will undoubtedly, in most cases, be more agreeable to them than a new abode would be. It is also to be noted that when the purchaser pays the sellers "in kind" rather than in cash, the effect of fluctuations in the price level will be avoided and under the bond the sellers will be assured of the means of support for the balance of their lives, if the purchaser remains solvent.

However, in general, farming in this country, at least since the turn of the century, has usually been profitable enough so that it has not been necessary for economic reasons to make this kind of an arrangement. Hence, the ordinary bonds are not only unnecessary but also perhaps positively inadvisable, since the danger of friction and disagreement,

ever present in such a relationship, is more imminent when there is a spirit of independence in either the sellers or the buyer or both, arising from an economic position under which either may dispense with the arrangement and still be economically independent. Furthermore, since the conditions in those parts of Central Europe where the bonds originated have prevailed over a long period of time, perhaps a more closely knit family relationship generally exists and, in addition, because of long experience with the bonds, the legal system is possibly better adapted to the administration and enforcement of such instruments.

This generally unfavorable attitude toward bonds of maintenance is reflected in the trend in the number of such instruments written in the town of Newton. The decline, especially since 1900, is significant, although a decrease in the population and a slight increase in the size of farms in this area during the same period undoubtedly are to a small extent contributing factors.

Table I. Number of Bonds of Maintenance Written in the Town of Newton, Manitowoc County, Wisconsin, by Decades

Decade	Number
1860-1869	13
1870-1879	20
1880-1889	48
1890-1899	40
1900-1909	23
1910-1919	21
1920-1928*	7

* Note that this period is not a full decade.

An Alternative Plan

However, if the common bonds of maintenance are no longer to be used, some other plan or instrument must be found to take their place. We need here concern ourselves only with a plan which would be suitable under the circumstances in which a bond of maintenance would, or might, otherwise be used. In other words, it must be an arrangement under which, while economic conditions are such that the two families may live apart and still leave something for the other heirs, the purchaser will nevertheless be able (1) to buy the farm without the use of outside credit, his share in the estate being equivalent to the usual down payment; (2) to pay for it on the installment plan on a long-term basis; and the sellers will be able to draw upon their equity in the farm to the extent of the interest and part of the principal for their daily needs. Manifestly, to attempt to devise a plan or plans which would be fair and advantageous, if the purchaser would have to draw upon outside credit, would be to endeavor to solve the entire problem of farm credit, which is outside the scope of this paper. It seems that the above described requirements would be adequately met by a deed and sale contract calling for a certain annual payment, consisting of the interest and part of the principal, and based on the amortization plan. Such a contract would also introduce the element of uniformity in the payments, which would usually be an advantage to both parties. This arrangement would be somewhat similar to bonds of the second type. The will would be taken up separately, and would have no direct connection with the sale of the farm.

The original owners may live with the son or son-in-law, if a mutually satisfactory arrangement can be made. The former may secure from the latter such of their necessities as the farm affords if they can agree upon prices, which should not be difficult in the case of most articles, and these supplies may be credited against the next cash payment due. All people interviewed agreed that in no case should the two families eat at the same table. However, the older

people should have the right to move away and live elsewhere in the event of incompatibility, disagreement about the living arrangements, or other reasons. In other words, if, given good will, there is mutual benefit to be derived by the two families from common habitation of the farm home, they should have the opportunity to receive and enjoy it, but if family discord should result therefrom, they should not be forced to live together, as in that case such a relationship would be more harmful than helpful. Experience over a long period of years has shown that a bond does not guarantee good will, except when economic pressure, preventing an alternative, induces the parties to the agreement to exert greater effort to adjust themselves to each other.

II. The Ice Industry: Its Economics and Future*

By L. B. BREEDLOVE

IN social theory all industrial organizations have the same objective, namely, the best price or that price point where the equilibrium of demand and supply produces the largest volume of goods or services. In some industries this object may best be achieved by a number of small producing units operating in competition and in other industries by a single large producing unit operating without direct competition under a monopoly grant and public regulation as to price and service. In this latter group fall the industries in which duplication of investment arising under conditions of competition leads to higher prices and service inconveniences, and for most members of this group the economies of increased size are decisive up to the point of absorbing the complete market. Thus the question which is the best path to the objective in a particular industry becomes a question of economics and social policy.

Most of the confusion arises in settling the economic question. Unless service inconveniences or price dislocations arouse him, the average citizen takes little interest in the problems of a particular industry in which he is not actively engaged. Even there his opinion of the reduction in price which can be achieved through the economies of increased size or consolidated operations by restricting the number of producers is largely formed from the statements of informed business leaders or recognized students and only in a minor way by the statements of those in the industry. The heritage from the long struggle of our forefathers against monopolies is a deep ingrained fear that monoply price will in some degree be exacted unless the economies of operation as a monoply are sufficient to lower selling price below that achieved by competition and accompanied by public price control to protect against the consumers' bargaining disadvantage. In the case of the so-called local utilities, experience with service inconveniences and frequent financial failures of producing companies had demonstrated to the public that competition was injurious and wasteful. But the public's fear of monoply grants has been assuaged by the demonstrations of business leaders that economies of consolidated operations are sufficient with public control of prices to reduce selling price materially and to provide adequate return to the capital needed in the business.

The rapid growth in the volume of sales and the stability of the return to the invested capital in these local service enterprises under public regulation of price and service have caused many to regard public utility status as a haven of relief from the ills of competition. When the market inroads of another commodity or overproduction in the industries producing necessities depressed the earnings on the invested capital, many turned envious eyes toward public utility status. Within recent years there has been a tendency

* *Editorial Note:* This is the second and last article on the ice industry. The first article appeared in the August number of the *Journal of Land & Public Utility Economics*, pp. 234-248.

to urge that, because they supply necessities, the coal, oil, ice, and even the bread producing enterprises be regulated as public utilities. Current periodicals at frequent intervals contain articles or reports of addresses which urge that specific industries be included in the public utility family and point out that the future will witness an increasing parade of new utilities.

Of these specific industries, the improvements in manufacturing methods and the ease of financing brought a rapid increase of producing capacity in excess of the increase in the consumption by the public with a consequent reduction in the return on the invested capital to a point where the continuance of many of the enterprises was in jeopardy. It was apparent that unbridled direct competition did lead easily to the wastage of the capital supply by the non-risk investor and the risk-taking stockholder of the enterprise which could and did serve the public most efficiently. Many began to urge that some form of social control be adopted to prevent men from adding to the present producing facilities of the industry which was already suffering from overcapacity. The proposal first arose in the case of the businesses with large inflexible plant investment serving limited market areas but was rapidly extended to those serving large and broad markets. The businesses operating plants probably just as inflexible but representing a lower capital investment in respect to gross sales in either limited or broad markets were quite generally not considered to fall in this group and in them competition to select the most efficient producers was to continue unabated. The water-ice industry, serving limited market areas by inflexible plants with a capital turnover about one-half of that in the natural utilities and considerably lower than that usual for industrial plants, was among the first of the group to experience the ills of overcapacity but soon became a conspicuous member of this latter group of businesses in which limitation upon the freedom to enter the producing field was urged.

The problem of control presented in this new proposal is so to balance production capacity with consumption that the public will be adequately served at a price which does not represent monopoly power but which sufficiently presses on competitors to develop efficiency while amply rewarding the most efficient producers. In the case of natural monopolies, where service inconvenience to the public and higher selling prices result from the duplication of investment arising from competition or, as is true in most cases, where the economies in consolidation are decisive until the whole market is absorbed, the limitation of the market to one producer together with public determination of price to provide adequate return to attract the necessary capital achieved a dual purpose—namely, reduction of the price to the public and financial stability for the producers. The new proposal did not contain such a dual purpose, since the purpose of competition to bring lower prices and adequate service to the public was being achieved, but the other purposes of ample reward and financial stability of the most efficient producer were being defeated.

In the specific industries which were urged for election into the utility fold, no serious service inconvenience to the public existed and competition had worked to expand customer service and to lower prices to the benefit of the consumers. The water-ice industry was one of the first of these industries to seek public utility status. Since 1921

associations of ice manufacturers in the southern states have been aggressively active in urging that the ice industry be declared by law a public utility and regulated as such. At the outset a few producers exhibited interest in such a movement. Because of the lack of service inconvenience and the price reduction achieved through competition, the average citizen showed little or no interest in the contention that the water-ice business was a natural monopoly. As the capacity in the industry continued to mount as a result of the ease of financing and as the mechanical household unit came to the front, more ice producers began to regard public utility status as possibly the only method to restrain the growing surplus in producing capacity and to secure a fair return on their investments. Association headquarters went out to enlist support, and did so by pointing out the benefits which would result to the ice producers. But little study was given to the economic and social question involved in the proposal urged upon the public.[1]

Legislation and Court Review

The legislatures of two southern states, Oklahoma and Arkansas, responded to the urging of this minority group that the water-ice business be declared a public utility. The records of the hearings before the legislative committees do not show any careful deductive thinking about the current problems presented and it may be that the legislators, as is sometimes the case, felt that they would satisfy the minority group in the body politic and leave the question to review by the courts.

Oklahoma in 1925[2] and Arkansas in 1929[3] enacted statutes placing ice plants under the jurisdiction of their respective commissions having administrative powers over public service enterprises. In markets where only one plant existed or producers had agreed upon price, the Corporation Commission of Oklahoma, under the Anti-Trust Statute,[4] had been regulating the price of ice for 15 years. The Corporation Commission of Oklahoma was in favor of the statute requiring a certificate of convenience and necessity. Bills containing similar provisions were introduced in the legislatures of Michigan, New Mexico, Texas,[5] Florida, and Georgia, but all failed of enactment into law.

[1] In a pamphlet prepared to support this proposal we were advised that dependable substitutes for the service of the electric, gas, telephone, and street railway utilities are available to the customer. But "not so with ice." "The masses must refrigerate with factory made ice or do without refrigeration." "Ice, then, . . . is an absolute monopoly." The characteristics which cause the water-ice industry to be a public utility are set forth as follows: ice is a standardized product, to produce ice requires inflexible investments in plants, ice deteriorates immediately if not enclosed by insulation, and the demand for ice is extremely seasonal. *Conditions in the Ice Industry of Texas that Support Its Treatment as a Public Utility*, a pamphlet by P. A. Weathered, Secretary-Counsel, Southwestern (Texas) Ice Manufacturers' Association, p. 2.

The industry is, it is urged in another document circulated by the above Association, "a natural monopoly", yet on the identical page attention is particularly directed to the fact that new plants increase competition and that this brings a lowering of prices to the public. Surprisingly, on the next page it is claimed that "duplications of plants and services must eventually bring about price levels that will support [*fair return*] both the necessary and the surplus investment." How this result is achieved under conditions of free competition is not explained but the text contains the inference that the larger producer is constantly being forced to buy out competitors and competitors tend to agree mutually upon selling prices. Most of the legal briefs have contained similar statements to those in the quoted sources and have exhibited a lack of knowledge of the economics of the ice business and a disregard for the recognized earmarks of a public utility.

[2] Ark. Acts 1929, Vol. II, p. 1322 (Act 313).

[3] Oklahoma S. L. 1925, c. 147 (Act 55).

[4] Section 13 of the anti-trust statute provides: "That whenever any business by reason of its nature or extent . . . becomes such that the public is interested in its use . . . and in the product that it sells, and in the price charged for the same . . . or is a virtual monopoly . . . [it] is a public business, and as such is subject to regulation by District Courts or the Corporation Commission of the State." (Oklahoma S. L. 1907, c. 25.)

[5] In a case in Texas the court held that the ice indus-

(*Footnote 5 continued on page 407*)

In the first case[6] to come before the Oklahoma Supreme Court the constitutionality of the law declaring the water-ice industry a public utility was not a direct issue but the court found that the State under the Anti-Trust Statutes was within its right in regulating the price of ice and observed as follows:

"The manufacture, sale, and distribution of ice in many respects closely resembles the sale and distribution of gas as a fuel, or electric current, and, in many communities the same company that manufactures, sells, and distributes electric current is the only concern that manufactures, sells, and distributes ice, and by reason of the nature and extent of the ice business it is impracticable in that community to interest any other concern in such business. In this situation, the distribution of such a necessity as ice should not be permitted by reason of the impracticability of anyone else engaging in the same business to charge unreasonable prices, and if such an abuse is persisted in, the regulatory power of the state should be invoked to protect the public . . .

"It may be observed that, although a business is clothed with a public interest, this is not determinative of what regulation may be imposed upon such business. The extent of regulation must be determined from the character of the business, and the extent of such regulation must always be reasonable in view of the private rights of the owner, and the regulation should only be to the extent of correcting such abuses as have resulted in injury to the public. It may be contended that if the manufacture, sale, and distribution of ice are subject to regulation for the reason that the distributor happens to be the only one engaged in the business in a particular community, a mercantile establishment, which happens to be the only one in a community, would be subject to regulation for the same reason. The fallacy of such a contention is apparent. Ice is an article of common household necessity, the supply of which must ordinarily be purchased every day. Ordinary articles of merchandise may be purchased at a convenient time and in sufficient supply for ordinary use for a considerable time."

The Supreme Court of Arkansas,[7] in 1930, declared that the sections of the statute enacted by the Legislature, providing for the securing of a certificate of necessity from the Railroad Commission were in violation of the provisions of the Arkansas Constitution and of the Fourteenth Amendment to the Federal Constitution. The Court sustained the provisions of the statute empowering the Railroad Commission to limit and fix the price of ice.

In February, 1930, E. A. Liebman started the construction of an ice manufacturing plant in Oklahoma City and was about to engage in the manufacture, sale, and distribution of ice in that City without having obtained a certificate of necessity and convenience from the Corporation Commission as

(Footnote 5 continued from page 406)

try was a public utility and that the City of Denton had the power to define and constitute the ice business as a public utility. Since the City had the power to manufacture and sell ice under the state laws and the provisions of its charter, the court declared that it was not its function to decide the wisdom of exercising the power. (*City of Denton et al. v. Denton Home Ice Company*, Commission of Appeals of Texas, Sec. A, 18 S. W. (2d) 606 (1929).)

[6] The Oklahoma Supreme Court in the case of *Oklahoma Light & Power Co. v. Corporation Commission*, 96 Okla. 19, 24; 220 Pac. 54 (1923) upheld the right of the Commission to regulate the ice industry as to its prices and practices under section 13 of the Anti-Trust Statutes. The passage of Oklahoma House Bill No. 189 approved April 7, 1925 (note 4) was a result of this decision. This statute declares that the ice business is a public business; forbids persons from engaging therein without a license from the Corporation Commissioner of the State, granted after a hearing; and provides that application for such license may be denied if it appears that facilities existing in the community are sufficient to meet the public needs therein. It is further provided that: "In addition to said authority, the said Commission shall have the right to take into consideration the responsibility, reliability, qualifications and capacity of the person, firm or corporation applying for said license and of the person, firm or corporation already licensed in said place or community, as to afford all reasonable facilities, conveniences and services to the public and shall have the power and authority to require such facilities and services to be afforded the public."

[7] *Arkansas Railroad Commission v. Castetler and Cap. F. Bourland Ice Company v. Franklin Utilities Company*, 180 Ark. 770 (1930).

required by the statute. The Southwestern Utility Ice Company and the New State Ice Company brought separate suits to enjoin Liebman from engaging in the manufacture and sale of ice in Oklahoma City. The two suits were consolidated for trial in the United States Court for the Western District of Oklahoma. The Court affirmed the right of the Commission to fix prices for ice but denied it the right to restrain the construction or operation of additional plants.[8] Upon appeal to the United States District Court of Appeals the decision of the lower court was affirmed:[9]

"Notwithstanding the close relationship between price regulation and the requirement of a certificate of convenience and necessity, we are of the opinion that a limitation on the right to engage in a business which is a matter of common right is an even greater encroachment on the rights of a citizen than the regulation of prices in such a business. Hence, to justify such a limitation, there must exist stronger circumstances making the regulation necessary in order to protect the public, than are required to warrant the fixing of rates or prices. . . . A state may not, under the guise of protecting the public, arbitrarily prohibit a person from engaging in a lawful, private business, or impose unreasonable and unnecessary restrictions upon such a business."

Many students and men of wide business experience have continuously insisted that all plans for stabilization and limitation of production would prove futile unless in some way the equivalent of the certificate of public convenience and necessity is made a prerequisite to the embarking of new capital in an industry in which the producing capacity already exceeds the requirements of the consuming market. Most of these did not regard the water-ice business as a natural monoply. Under the power to interpret the Federal Constitution, the Supreme Court of the United States, as one writer has expressed it, is "the first authoritative faculty of political economy" and the decision of the Court on the constitutionality of the Oklahoma statute, requiring a certificate of public convenience and necessity before engaging in the production and distribution of ice, an appeal having been taken from the decree of the United States District Court of Appeals, was awaited for a determination of whether the Court would allow the use of the police power in this manner in the ice industry and if so would establish a basis for such social control which would protect investors and stockholders in other industries from the destructive effects of overcapacity.

The United States Supreme Court affirmed the decree of the lower court, in a six-to-two opinion delivered by Mr. Justice Sutherland,[10] and dismissed the bill for want of equity on the ground that the business is a private business which may not be subjected to such regulations. The opinion, delivered in March 25, 1932, contained the following:

"It must be conceded that all businesses are subject to some measure of public regulation. And that the business of manufacturing, selling or distributing ice, like that of the grocer, the dairyman, the butcher or the baker may be subjected to appropriate regulations in the interest of the public health cannot be doubted; but the question here is whether the business is so charged with a public use as to justify the particular restriction above stated. If this legislative restriction be within the constitutional power of the state legislature, it follows that the license or permit, issued to appellant, con-

[8] *New State Ice Co. v. Ernest A. Liebman; Southwest Utility Ice Company v. same;* District Court for the Western Dist. of Okla., Equity Nos. 1107-8 taken from *United States Daily*, July 10, 1930.

[9] *Southwest Utility Ice Co. v. Ernest A. Liebmann; New State Ice Co. v. Liebmann*, Circuit Court of Appeals, 10th Circuit, Nos. 405, 406 taken from *United States Daily*, Sept. 21, 1931, p. 4.

[10] *New State Ice Company v. Liebmann*, Adv. Op. 479; Sup. Ct. Rep. Vol. 52, p. 371.

stitutes a franchise, to which a court of equity will afford protection against one who seeks to carry on the same business without obtaining from the commission a license or permit to so do . . . In that view, engagement in the business is a privilege to be exercised only by virtue of a public grant, and not a common right to be exercised independently by any competent person conformably to reasonable regulations equally applicable to all who choose to engage therein."

Cases upholding the regulation of grist mills and cotton gins were referred to as involving businesses affected with a public interest, under the peculiar circumstances obtaining locally, to illustrate the extent to which various businesses may be regulated, where the industry is of vital concern to the general public. So also were cases referred to, upholding the power of a state to clothe irrigation companies and mining companies with the power of eminent domain, involving the cognate question whether they constitute a public use for which the power of eminent domain may be invoked. The conditions, however, which were thought to justify the holdings in those cases were found entirely lacking in the manufacture, sale, and distribution of ice. To show that the people of the state generally are not dependent on ice dealers, the growing use of relatively inexpensive gas and electric household refrigerators was suggested. In conclusion, the constitutional objections to the statute were summarized as follows:

"Stated succinctly a private corporation here seeks to prevent a competitor from entering the business of making and selling ice. It claims to be endowed with state authority to achieve this exclusion. There is no question now before us of any regulation by the state to protect the consuming public either with respect to conditions of manufacture and distribution or to insure purity of product or to prevent extortion. The control here asserted does not protect against monopoly, but tends to foster it. The aim is not to encourage competition, but to prevent it; not to regulate the business, but to preclude persons from engaging in it. There is no difference in principle between this case and the attempt of the dairyman under state authority to prevent another from keeping cows and selling milk on the ground that there are enough dairymen in the business; or to prevent a shoemaker from making or selling shoes because shoemakers already in that occupation can make and sell all the shoes that are needed. We are not able to see anything peculiar in the business here in question which distinguishes it from ordinary manufacture and production. It is said to be recent; but it is the character of the business and not the date when it began that is determinative. It is not the case of a natural monopoly, or of an enterprise in its nature dependent upon the grant of public privileges. The particular requirement before us was evidently not imposed to prevent a practical monopoly of the business, since its tendency is quite to the contrary. Nor is it a case of the protection of natural resources. There is nothing in the product that we can perceive on which to rest a distinction, in respect of this attempted control, from other products in common use which enter into free competition, subject, of course, to reasonable regulations prescribed for the protection of the public and applied with appropriate impartiality.

"And it is plain that unreasonable or arbitrary interference or restrictions cannot be saved from the condemnation of that [Fourteenth] Amendment by merely calling them experimental. It is not necessary to challenge the authority of the states to indulge in experimental legislation but it would be a strange and unwarranted doctrine to transcend the limitations imposed upon them by the Federal Constitution. The principle is embedded in our constitutional system that there are certain essentials of liberty with which the state is not entitled to dispense with in the interest of experiments."

Thus the courts have consistently upheld the power to protect the public against high prices or monoply price arising from merger, combination, or agreement between ice producers in the same market, but, equally as con-

sistently, have denied the right to give a public grant of market to a sole or few ice producers and to regulate prices to provide a fair return to such producer or producers, holding that the benefits to the public are not sufficient to warrant encroachment on private rights.[11] The demarcation is based, as in the case of most so-called local utilities, on the characteristics in the behavior of costs of rendering service; if the economies of increased output are decisive until the whole market so alloted is absorbed, then limiting that market to one producer and regulating price to provide him a fair return results to the advantage of the consuming public; if such economies are not decisive until the complete market is served, competition results to the benefit of consumers and the absence or ineffectiveness of competition tends to monoply price which must be restricted. In the opinion of the court the limitation upon the freedom to enter the producing field, when this limitation was designed to prevent destruction of the returns on the invested capital of the efficient producers, tended to foster monoply which would result in increase of price and inefficiency and, therefore, must be restrained.

The dissenting opinion delivered by Mr. Justice Brandeis[12] contains a powerful argument in support of the statute upon the broad ground that modern ecomomic needs require new remedies which can be found only by the trial and error method of experimentation, and that the Fourteenth Amendment should not be construed narrowly to throttle such experimentation. Before developing this thesis, however, attention was called to other grounds upon which the statute was thought supportable. A brief summary of some of these grounds must suffice here, and resort had to the opinion itself for the full discussion of the details. It was pointed out that the attack here was upon the statute itself, as such, rather than upon any claim of its arbitrary application, so that it should be upheld, if, upon existing conditions, the Legislature reasonably could conclude that the public welfare required treating the business as a "public business" and could also reasonably conclude that the exclusion of some persons from the business was necessary to insure an adequate supply of ice. Local conditions and the history of the legislation were discussed in detail to demonstrate that the legislative conclusion was not without support. The dissenting opinion was concluded with a discussion of the broad ground that present economic conditions require the Fourteenth Amendment to be so construed as not to prevent experimentation in the field of social and economic science.[13]

"It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory and try novel social and economic ex-

[11] Editorial comment in the major publications has almost entirely approved the opinion of the courts that the water-ice industry is private, not quasi-public business, and should not be regulated as a utility. Many editorials, pointing to the long extolment of private initiative by business men as sufficient to meet business problems, have viewed the movement to secure utility status as an indictment of the management in the industry. A large number of editors have viewed with alarm the tendency to urge public utility status for the industries suffering from overproduction, and have regarded it as a disguised effort to make the public "bail out" private interests. The doubt that legislatures generally do not give sufficient consideration to social-economic questions when some group in the body politic becomes active underlies the rejoicing by some editors that our system occasions a weighing of the facts by the judiciary.

[12] Mr. Justice Stone concurred with Mr. Justice Brandeis.

[13] Many writers feel that the present and the future call for measures to prevent the wastes of overcapacity from falling on investors and stockholders of the enterprises which do efficiently serve the public so long as the public does not suffer in point of price or service.

periments without risk to the rest of the country . . .

"Increasingly, doubt is expressed whether it is economically wise, or morally right, that men should be permitted to add to the producing facilities of an industry which is already suffering from overcapacity. In justification of that doubt, men point to the excess capacity of our productive facilities resulting from their vast expansion without corresponding increase in the consumptive capacity of the people. They assert that through improved methods of manufacture, made possible through advances in science and invention and vast accumulation of capital, our industries have become capable of producing from thirty to one hundred per cent more than was consumed in the days of vaunted prosperity; and that the present capacity will, for a long time, exceed the needs of business.

"All agree that irregularity in employment—the greatest of our evils—cannot be overcome unless production and consumption are more nearly balanced. Many insist that there must be some form of economic control. There are plans for proration. There are proposals for stabilization. And some thoughtful men of wide business experience insist that all projects for stabilization and proration must prove futile unless, in some way, the equivalent of the certificate of public convenience and necessity is made a prerequisite to embarking new capital in an industry in which the capacity already exceeds the production schedules.

"Whether that view is sound nobody knows. The objections to the proposal are obvious and grave. The remedy might bring evils worse than the present disease. The obstacles to success seem insuperable. The economic and social sciences are largely uncharted seas. We have been none too successful in the modest essays in economic control already entered upon. The new proposal involves a vast extension of the area of control . . . Some people assert that our present plight is due, in part, to the limitations set by courts upon experimentation in the fields of social and economic science; and to the discouragement to which proposals for betterment there have been subjected otherwise. There must be power in the States and the Nation to remould, through experimentation, our economic practices and institutions to meet changing social and economic needs. I cannot believe that the framers of the Fourteenth Amendment, or the States which ratified it, intended to deprive us of the power to correct the evils of technological unemployment and excess productive capacity which have attended progress in the useful arts."

The water-ice business, in the opinion of the majority of the final court, is private, not quasi-public. The ice-producing enterprise is not a public utility in the business and economic sense and cannot be so treated. The dissenting opinion points out that, as far as the "source of the power" to regulate is concerned, there is no essential difference between the private business and the public utility; and that whatever limitations there are on police power regulation are set by the "due process" clause which "requires that the regulation shall be not unreasonable, arbitrary or capricious, and that the means of regulation selected shall have a real or substantial relation to the object sought to be obtained." Consequently, so long as such legislation meets the test of reasonableness in the "due process" clause, the Fourteenth Amendment should not be used to throttle legislation designed to mould through social and economic experimentation our practices and institutions in keeping with changing needs.

That ice is necessary and indispensable undoubtedly does not distinguish the ice business apart from the bread, milk, shoe, or coal business. The dependence of consumers, each engaged in specialized activities, exists equally on these industries for the products which support and contribute to life. In the past, privately organized production has amply supplied the demand and at the present in practically every location there is more than one producer serving the market and in addition a number o satisfactory substitute products, price

of which are being rapidly reduced by competition, are now available.

Behavior of Costs in the Ice Industry

Just as the artificial gas industry stores gas in advance of peak demand in order to reduce investment cost in the manufacturing plant and to operate the plant at a more uniform rate, so does the water-ice industry store ice. Thus low unit costs of both ice and gas depend largely on obtaining a proper balance between investment costs and production costs of the manufacturing plant on the one hand, and investment cost and operating cost of the storage plant on the other hand. In the gas enterprise, producing plant capacity expands at a faster rate than does investment cost, since capacity costs and production costs are reduced with each increase of capacity factor. In the ice producing plant, on the other hand, investment costs per ton increase almost at a constant rate as daily manufacturing capacity expands, and investment cost of storage capacity falls away rapidly up to 5,000 tons but only slightly as storage capacity further increases. Operating cost of storage mounts with increase of capacity, while production cost economies, which can be achieved by increasing storage so that capacity factor[14] of the manufacturing plant may be improved, diminish with each increment of improvement in the capacity factor as the manufacturing capacity plant increases. The larger the producing capacity, the greater must be the storage volume to improve plant capacity factor, and the higher do investment cost and expenses of storage mount while at the same time the smaller become the operating economies arising from improved capacity factor as the manufacturing capacity increases. Thus, the possibility of achieving economies hinges materially upon the curve of market demand for ice. The higher the peak demand relative to the average demand during the moderate-temperature months, the larger must be the storage, in order that the largest size plant can obtain the economies of size as well as economies arising from the improvement of capacity factor. But the small plant with only a few days' storage, if the output can be sold in the warm months, can operate at a higher capacity factor and with a total production cost per ton equal or less than that of the large plant which must absorb storage expenses. Ice producers have generally anticipated a peak demand in excess of the demand during moderate-temperature months, and have built their plants to handle as much of the peak as their capital resources permitted.

[14] Capacity factor may be described briefly as the percentage of the full capacity of the plant which is utilized.

Pricing Policies and Competition

The ice producer depended upon his marketing position during the high-temperature months to secure a price which would take care of his production and storage costs, his losses during the cooler months, and provide a profit over and above the price he could secure during the warm months. The price in the peak demand months was determined largely upon the principle of "what the traffic would bear." When the ice producer could get his price during the warm months, he experienced no difficulty with capital turnover.

The struggle among the competitors, who had built their plants to handle as much of the peak demand as their resources permitted, has served to reduce selling prices to the public during that period. The reduction in price at peak demand periods undoubtedly increased the volume moved, but the use of the peak period price for other moderate-temperature months provided the oppor-

tunity for the small plant operator and retarded public consumption of the product. The capital requirements are sufficiently low so that the small capitalist with possibly only local credit can enter the producing field with plants of small capacity which, with high capacity operation during the warm months and little burden of storage to meet peak demand, can compete on a basis of equal operating efficiency with the larger producers. Competition among the larger producers forced prices below the readiness-to-serve cost, which in turn was being met in part by the maintenance of uniform prices and by continuing the same price during the moderate-temperature months.

This situation provided an attractive opportunity for the owner of the small-capacity, electrically driven, raw-water plant with limited storage. He could sell his output during the warm months with ample return on his capital and allow someone else to carry the peak demand. Reduction of the prices that enabled the large producer to carry the burden of readiness-to-serve cost during peak times does not lower the capital returns for these small plant operators. Price reduction to peddlers,[15] in order to compete indirectly with the small plant, led to retail price reductions, and thus undermined the price structure deemed necessary for the survival of the large producers who assumed the responsibility of meeting peak demands.

The competition of mechanical household refrigerator units has worked principally to reduce average consumption over the months of the year, and the new customers secured to replace the losses of large-quantity users have been generally peak-months users, and this has increased the peak demand relative to average consumption. Without increase in the average consumption during the moderate-temperature months sufficient to provide an additional volume of sales over which to spread cost to offset the decrease in peak demand, the ice producer, who operated a larger plant having sufficient storage capacity to care for as much of the peak demand as he thought he could secure, would have needed an increase in price to provide ample returns on his invested capital.

If the law providing for the certificate of convenience and necessity were sustained, it would not improve the competition now existing in the market. With new competitors shut out, the existing producers could more easily maintain a secret agreement as to price. If competitors should merge through exchange of stock, an effective monopoly would be created. The use of police power to protect the public against excessive prices arising under the condition of effective monopoly has been long sustained. But commission or court determination of prices is likely to be based on competitive prices prevailing in comparable markets and this would not improve the capital turnover of the industry unless economies of consolidated operation were sufficient to improve materially the net operating income.

Economies with Consolidated Operations

In only rare instances has any one producer been able to secure or maintain a monopoly production in larger towns or cities. Buying of competing plants has been a continuous process which has saddled the buyer with producing capacity, a large part of which was becoming obsolete in production method and which generally had large storage. Competition has worked to the advantage of the public as to both price and service during the peak demand period

[15] Peddlers, not operating manufacturing plants, buy ice at wholesale and deliver and sell at retail prices, generally during the warm season only.

and generally through the warm-months period, but in the cooler months service to the public often becomes inadequate. There is no imminent danger of failure of competition during the warm months but there is need for better service during the cooler months which competition has not worked to provide. The failure to develop the off-peak market results from the lack of initiative and inferior quality of management.

The total investment in delivery equipment is about the same whether one or two delivery systems serve the city. Although conceivable, complete paralleling of routes cannot generally be indulged in and each delivery system gravitates to particular districts with the border zones hotly contested. Experience with competing delivery systems seems to indicate that not more than 15-20% duplication in the investment is occasioned, unless some producers are desirous of financing an extensive struggle; but the duplication in direct cost is higher and probably varies from 25 to 35% of the total direct cost of delivery. The reduction in selling price which can be made by consolidating delivery systems and eliminating these duplications is only about 15% and these savings can be easily dissipated by poor supervision or choice of equipment and men. Delivery system operation requires the closest type of personal supervision. Experience with consolidated delivery systems clearly proves that a slight reduction in selling price destroys the economies which can be achieved unless supervision is of the highest grade.

The economies of production in the period of high demand do not lie in consolidating the production in one plant but in production in several plants each located near its market and having sufficient storage to care for the peak demand of that market and on which the delivery system for the district is based. Substantial economies at peak demands could be effected by this method. In months of lower demand it is more economical to produce ice in one larger plant rather than in several small plants. This would increase delivery costs only slightly because of the longer hauling, particularly since delivery is carried out by swiftly moving trucks, and, on the other hand, it would be more economical in periods of maximum demand to have a central plant with large storage from which ice could be relayed at night to augment the storage at the smaller district plants.

The aggregate savings of consolidated operation increase with improvement in load factor. If peak demand expanded and the average monthly demand remained stationary or fell away, the net economies of consolidated operation would be meager. But if average demand was increased and the peak demand remained stationary, the aggregate economies would be considerably enlarged. Calculations for a limited number of typical markets, and assuming ideal conditions, lead to the conclusion that a considerable increase in average demand must be obtained before a reduction in selling price to the public could be effected and yet provide normal returns to capital requirements based on present-day costs. In these calculations each class of customer was assessed his proper share of the readiness-to-serve costs. The existing plants in practically all markets have not been erected with this purpose in mind and consequently do not have that balance between producing capacity and storage from which economical consolidated operations could easily be evolved.

It is doubtful if the police power could be used to force consolidations between existing producers, but if the law

requiring a certificate of convenience and necessity were sustained, existing producers would probably consolidate voluntarily. Such consolidations could hardly be carried out by purchase and sale at prices based upon present earning capacity, for this would result in a loss in investment for the majority of the older producers in the industry. Probably, the consolidation could be carried on through exchange of stock. The initial determination of a rate-base, on which the unit would be allowed to earn a fair return, would require segregation of considerable property. Many obsolete plants and much excess producing capacity now exist. How the surplus in the present operating plants could be eliminated under the law is difficult to see. If present-day reproduction cost was applied, the consolidated unit would experience a loss of capital but a reasonable return on such base would nevertheless require increased prices; if historical or original cost were accepted, the rise in prices would be considerably more. Any increase in punctuality of delivery or other features of service, which would undoubtedly be demanded from a utility by consumers, would materially increase delivery costs. As selling prices rose, consumers would more readily turn to the individual mechanical units or other substitutes.

Pricing Policies

Pricing policy in the industry discourages waste and recognizes quantity, but does not encourage increased consumption since the large retail buyer pays the same rate as the small; nor does it recognize the fundamental factors of cost—namely, demand and load factor. The proper pricing plan to improve load factor has not been developed under the spur of competition and reduced earnings are an indication that the economies of consolidated operation are less likely to be developed under a condition of monopoly. The social purpose of finding a price schedule, which would move the greatest volume of goods and give the largest aggregate profit to both consumers and producers, can best be achieved under competition, for the public benefits attainable by limiting the common law right to engage in production are insufficient to outweigh the obstacles to correct pricing.

The fundamental weakness of the water-ice industry is that its product has always been priced without regard to the chief economic feature, the cost of readiness to serve. The peak-time consumer pays the same price as the man who uses ice for eight or nine months of the year. One is not paying his proper proportion of the readiness-to-serve costs and the other is paying too much. Classification of ice customers, while not as easy as in the electric and gas utilities, can readily be made on a basis of size, load factor, and demand. Companies have enough data on customer consumption to determine for each group their share of peak responsibility. For the periodical seasons of extremely warm weather the demand will increase but nearly equally so in each customer group. The allocation of the demand cost to the different classes of customers can be made by the so-called phantom method used in the electric utilities, basing the allocation not on installed capacity but on the necessary capacity for the aggregate of customers served.

As an illustration of the above principles, to the readiness-to-serve cost for each customer group must be added production cost, delivery cost to the consumer whether he secures his ice from the plant platform, cash-and-carry station, or at his residence, allocated overhead and estimated profit per ton. This can be done with sufficient ac-

curacy on a basis of average cost per ton for the customer group. The peak demand will occur in one of the summer months, but because of the possibility of customer misunderstanding, it is advisable that uniform prices exist over the period of the warmest months. For pricing the product during the four months of intermediate temperature the readiness-to-serve charge per ton is removed but the price for customers to whom delivery is made is increased in proportion to increase in delivery and the expenses of idle equipment. Pricing for the months of minimum consumption is based on actual direct cost for the purpose of encouraging consumption. The pricing plan for residential consumers is diagrammed on Chart V.

CHART V. PRICING PLAN FOR THE DIFFERENT CUSTOMER CLASSIFICATIONS

This residential rate may be applied on a per-ton-used basis or can be made a flat monthly rate depending upon the size of the customer's icebox or his use. Many customers like the contract rate for their uses but when the author suggested the flat rate in 1929 ice men generally objected that it would lead to waste of ice. The flat-rate plan is in successful operation now in many locations but the rates applied represent a higher proportion of the readiness-to-serve cost than such customers merit and consequently the value of this weapon to oppose the invasion of the mechanical household refrigerator has been largely destroyed. The attempt to coordinate platform sales, cash-and-carry-station sales, and delivery service, without the proper price differential between the different types of marketing and also without a proper proportion of fixed costs assessed against each, works to reduce overall net income.

The three-step residential price permits the building up of annual consumption and lowers delivery costs. Service conditions which the peddler cannot meet can be established and the invasion of the mechanical refrigerator best opposed. The effort must be to hold and build up the long period user and to abandon to the peddler and /or the small plant the hot-months', small-quantity user; if they cannot serve him, he must be compelled to buy from the cash-and-carry station. In specific instances this pricing plan will show only slight improvement in net income under the present conditions of low average annual consumption of customers but considerable improvement in capital turnover can be obtained with the improvement in average demand.

Conclusion

It is urged that the right to engage in a common calling is one of the fundamental liberties guaranteed by the "due process" clause. The economic purpose of the common law right to enter the producing field is to encourage and permit the creation of wealth. In our system, competition is depended upon to select and sustain the producers who can and do serve the public most efficiently. The due process clause undoubtedly does not require that every calling which is common shall remain so. In the Slaughter House case, the slaughter of cattle, a common calling, was sustained as a monopoly and later the common

calling of selling liquors was restrained by the police power. It is settled that police power used both in aid of health and safety extends equally to promotion of public welfare. The police power has been evoked to create or sanction monopolies in local service enterprises where duplication of investment leads to increased prices and poor service. The object of restricting the number of producers has been to pass on to the public, through lower prices and better service, and by means of limiting producers to a fair return on their investments, the economies arising from consolidated operation and the absence of duplicate investment. It follows, therefore, that the common law right freely to enter a business would and should not be restrained so long as competition works to reduce prices and increase the volume of goods sold.

Applying these principles to the ice industry, it appears that, if entrance to the business is restricted, a fair return on the consolidated investments of existing producers, whether the investments are valued on a present-day or historical-cost basis, cannot be had without increased prices and an accompanying drop in average consumption. Lower prices and increased sales seem more likely with skillful management in a competitive than in a sheltered market, largely because of the behavior of costs in the industry. Chief among the obstacles to this desired end are (1) the nature of the competition now in the industry, and (2) the unenlightened pricing policies hitherto prevailing.

The difficulty is that the competition of the small plant with limited storage, though equally as efficient, reduces selling prices during the warm months and transfers the burden of peak demand supply above its output to other producers. At present the storage and producing capacities of the larger competitors in most markets are ample to care for public demands but as they withdraw such capacity a special set of circumstances at peak demand periods may arise which will require restraint of monopoly price. The small plant is undoubtedly indulging in unfair competition but it is difficult to see how the police power can be invoked to force such producer to provide sufficient storage to care for his share of the peak demand requirements. A proper pricing plan by the large producers would tend to reduce the opportunity for the small plant and force such owner to adopt the same pricing plan which, because it embraces the readiness-to-serve element, would lead him to install storage capacity. This would tend to shift the demand at peak times to the efficient plants and thus lower costs.

Low capital requirements and the inability to store for long periods cause the water-ice industry to be a special case among the industries in which limitation of production has been urged. Limitation by certificate of convenience holds no benefits to the public or the water-ice industry. The opportunity to improve capital turnover lies in the increase in average consumption which can be attained by proper pricing and merchandising methods. Under the spur of aggressive competition by substitutes this result can best be attained under conditions of freedom of enterprise and private initiative. The market is at present relatively undeveloped and a vast market of building space cooling is opening up.

Regulation of the Issue Price of Public Utility Securities

By WILLIAM H. TAYLOR

CONTROL of the issue price of securities is an important problem from the standpoint of adequate regulation of public utilities. The purpose of this phase of regulation is to insure that utilities receive the greatest possible amount of funds for their securities, thereby maintaining capital costs at a reasonable level. Since capital costs constitute from 24 to 34% of the total costs of rendering public utility services, all effort expended to insure that these costs are as low as possible is beneficial to the public in the form of lower prices for utility services.[1]

The importance of adequate control in respect to capital costs has been intensified because of complications arising through the control of operating companies by holding companies. Financial transactions between the operating utilities and their parent companies, involving the sale or exchange of securities, may give opportunity for the holding company to retain excessive fees, or realize excessive profits on security sales to the disadvantage of the operating company. And connected with this problem are the interrelations between investment bankers and the officials of the major holding company groups. Hence, it may be very difficult for a state commission properly to supervise financial transactions between local utilities and a widespread interstate holding company.

The difficulty of the regulation of security issues has been increasing because of the great demand for capital in public utility industries. During the period from 1924 to 1929, inclusive, the total volume of public utility financing, new and refunding, was more than 13 billion dollars. Nearly three billion dollars of securities were issued in 1927, the peak year.[2] Though the rate of new financing has decreased during the past few years, with the return of normal industrial activity commissions will be required to investigate and approve an ever increasing amount of security issues.

In consideration of the importance of this problem to present day regulation, this study attempts to investigate the effectiveness of regulation of the issue price of public utility securities by public service commissions. What are the provisions among the various states for control of the issue price of public utility securities? What is the procedure followed by commissions in fixing minimum prices for security issues? How nearly do prices fixed by commissions approach later selling prices? To what extent and how do holding company operations influence control over the issue price of securities? And finally, what suggestions may be made for changes in the present system of regulation?

Provisions for Control of Issue Prices

Control of the issue price of securities is assumed by public service commissions in most states as a part of their power to authorize security issues. The public utility law may have a clause stating

[1] *Standard Financial Ratios for the Public Utility Industry*, Bureau of Business Research, University of Illinois, vol. 26, July, 1929.

[2] Reierson, Roy L., "Public Utility Financing", 6 *Journal of Land & Public Utility Economics* 208 (1930). The figures include both operating and holding company financing.

that the commission may attach to the issuance of any certificate under the law such terms, conditions, or requirements as, in its judgment, are reasonably necessary to protect the public interest.[3] Similarly, the New York Transit Commission states that, as an incident to its power to authorize the issuance of securities, the commission fixes the minimum price at which such securities may be sold and prescribes other necessary conditions governing their sale and the corporate purposes to which the proceeds of such sale may be applied.

However, a few states have conferred the power to prescribe minimum prices for security issues on the commission directly in the law regulating public utilities.[4] Wisconsin, for instance, prohibits the sale of bonds at less than 75% of face value, and of stocks at less than par value. A minimum price is fixed for each bond issue and also for no-par value stock.

In general, provision is made in the laws of most states to prohibit the sale of par value stock for an amount less than par.[5] The prohibition applies to stocks of all corporations, in many instances, and may occur in states exercising no special control over the capitalization of public service corporations.[6] In some states, where there are no statutory provisions prohibiting the sale of stocks below par value, the commissions maintain a policy of not authorizing sale of stock for less than par value.[7] In a few states this policy may be departed from in that stocks are permitted to be sold at a discount where circumstances warrant such authorization.[8]

The restrictions placed on the sales prices of stock (original issue) are widespread and are not necessarily a part of the regulation of public utility security issues alone. However, the fixing of a minimum sales price for bond issues occurs only in those states regulating public utility security issues, and applies only to those issues. Fifteen states and the District of Columbia prescribe minimum sales prices for some or all public utility bond issues authorized by the public service commission.[9] Minimum sales prices are fixed for no par stock sales in each of three states with the exception of those prohibiting the issue of no par stock, e. g., Massachusetts. It is with the authorization of security issues in these states that the greater part of this study is concerned.

Determination of Issue Prices

From a study of commission orders, communications with commissioners, and court cases, it is apparent that a number of factors appear to be considered by commissions when passing on the issue price of a security issue.

Before security issues are authorized by a commission proper application is necessary.[10] The application should state the amount, character, and purpose of the issue, the terms of issuance, and a description and estimated value of the property which is the basis of the issue. Before authorization a duty devolves upon the commission to investigate the terms of issuance and to fix a

[3] Wisconsin G. L. 1931, c. 183, §184.06.

[4] *Ibid.*; also Vermont G. L. 1925, c. 210, 211.

[5] Examples of such laws may be found in New York, New Hampshire, Vermont, and Wisconsin.

[6] Texas, G. L., Second called session, 1925, c. 52, §5.

[7] Illinois, New Jersey, Maine.

[8] California, Ohio, Nebraska, Massachusetts may allow securities of gas, electric light and water companies to be sold for less than par. See ch. 164, Sec. 18, Mass. Gen. Laws as amended.

[9] New York, California, Indiana, Missouri, Michigan, New Hampshire, New Jersey, Illinois, Nebraska, Vermont, Alabama, Wisconsin, Massachusetts, Ohio, Maryland, and District of Columbia.

[10] In Arizona, California, District of Columbia, Georgia, Illinois, Indiana, Kansas, Maine, Maryland, Massachusetts, Michigan, Missouri, Nebraska, New Jersey, New Hampshire, New York, Ohio, Vermont, and Wisconsin.

minimum price compatible with the public interest.[11] Par value stock may not be authorized to be sold for less than par except in a few states. The commissions, in exercising their authority over issue prices, examine the negotiations of the utility with bankers and brokers, the financial position of the utility, and the state of the investment market.

Briefly, the factors considered by various commissions are as follows:

(1) The general state of the investment market at the time of offering of the issue. The availability of capital seeking investment in enterprises of a public utility nature, interest rates, and general credit conditions are considered under this category. Decisions are based upon the general business experience of the commissioners, and upon information obtained from bankers, brokers, and financial periodicals.[12]

(2) The market value of outstanding securities of the company as represented by bona fide sales on stock exchanges or at auction.[13] In case the company applying for issue has no outstanding securities, or, if there are no market quotations of outstanding securities, the sales price for securities of other companies in similar circumstances is taken as indicative of the value of the securities to be issued.

(3) The influence of interest and dividend rates on the sales price of securities.[14] Discount on bonds is treated as a deferred interest charge. Hence, it is the effective interest rate and not the nominal interest rate that commissions recognize as exerting a controlling influence on the sales price of bonds. The effective interest rate must not be so high as to place an unreasonable burden on the utility in the form of fixed charges.[15]

Commissions have distinguished between the sale of stock at a discount and the sale of bonds at a discount. The former is evidence of ownership in an enterprise, and carries with it a promise to pay a pro rata division of the net earnings and, in case of liquidation, of the net assets of the corporation. Commissions have contended, therefore, that the par of outstanding stocks should represent the amount paid in by the purchaser. Thus, it is said, that subsequent purchasers and "innocent investors" are protected.[16]

(4) The investment in and earning power of the properties which the securities represent.[17]

[11] *Re Nebraska Power Co.* (Neb.), P. U. R. 1924 D 849; *Re Community Power and Light Co.* (N. J.), P. U. R. 1926 A 536

[12] *Re Penobscot Power Co.* (Me.), P. U. R. 1922 E 861; *Re Central Maine Power Co.* (Me.), P. U. C. Repts. 583, Feb. 28, 1922; *Re Gary St. R. R. Co.* (Ind.), P. U. C. Repts. No. 6552, May 26, 1922; *Re So. Calif. Gas Co.* (Cal.), O. & O. of the Cal. R. R. Com., Dec. No. 9721, App. No. 7245, Nov. 5, 1921. *Report,* Commission on Revision of the Public Service Commission Law (N. Y.) 1930, p. 135.

[13] *Re Citizens Gas Co.* (Ind.), P. U. R. 1928 C 354; *Re Washington Gas Light Co.* (D. C.), P. U. R. 1923 A 610; *Re N. Y. Rapid Transit Corp.* (N. Y.), P. U. R. 1928 B 274; Vermont G. L. 1925, No. 81, §§ 10 and 11; *Application of the Southern Sierras Power Co.* (Cal.), Dec. No. 18596, Cal. R. R. Com., July 8, 1927.

[14] *Re Derry Electric Co.* (N. H.), P. U. R. 1921 C 785; *Re Alabama Power Co.* (Ala.), P. S. C. Repts. Docket 5426, Sept. 12, 1928; *Re Biddleford and Saco Water Co.* (Me.), P. U. R. 1920 B 598; *Re Northern Indiana Gas & Elec. Co.* (Ind.), P. U. R. 1926 E 670; *Application of Southern Sierras Power Co.* (Cal.), Dec. No. 18596, App. No. 13855, Cal. R. R. Com., July 8, 1927.

[15] *Re N. Y. & O. Power Co.*, 1 P. S. C. (2nd Dist. of N. Y.), 453 (1907); *Re Melville Elec. Lt. Co.* (N. J.), P. U. R. 1930 D 1928; *Re Cumberland County Gas Co.* (N. J.), P. U. R. 1930 E 1; *Re Parr Terminals Co.* (Cal.), O. &. O of Cal. R. R. Com., App. No. 14,721, Dec. No. 19894, June 23, 1928; *Re Missouri Elec. Power Co.* (Mo.), 15 P. S. C. Repts. 584, Jan. 2, 1926; *Re City Water Co. of Sedalia* (Mo.), 16 P. S. C. Repts. 269, June 24, 1927.

[16] *Application of Penobscot Bay Elec. Co.* (Me.), P. U. C. Rep. No. 30, May 26, 1925; *Re Black Stream Elec. Co.* (Me.), P. U. R. 1915 C 361.

[17] *Re Golden Gate Ferry Co.* (Cal.), Cal. R. R. Com. Repts. App. No. 12375, Dec. No. 16001, Feb. 16, 1926; *Re Calif. Water Service Co.* (Cal.), P. U. R. 1928 C 576; *Re Kohler Aviation Corp.* (Mich.), P. U. R. 1930 B 242; *Re Northwestern Public Service Co.* (Neb.), P. U. R. 1926 D 366.

(5) The type and amount of securities to be sold.

(6) The relationship of the new securities to those already outstanding, and the price at which they were authorized.

(7) The life of the securities.[18]

These are the items which are made the basis of an informed judgment concerning the value of utility security issues, and, if they are considered in their correct relations, then the values fixed by commissions will approach very nearly the fair sales value of the securities; i. e., a price which would obtain in ordinary competitive markets.

One may well question whether commissions can and do determine all facts relevant to each security issue for which minimum prices are fixed and approved. The necessity of passing on a great volume of security issues, and of assembling all facts bearing on the value of each issue, would require more funds and a larger personnel than state commissions have to devote to this phase of regulation. To what extent can commissions determine the influence of a slight change in interest or dividend rates on the sales price of a new issue of securities? What will be the continuing or long-time trend in the money market? What effect will a new issue of securities have on the market value of outstanding securities?

The financial statements of utilities are used as the basis for determining property investment and earning power of the properties. Under present conditions control of utilities' accounting is notably weak. Field audits are conducted irregularly or not at all, and the financial reports of most operating utilities are prepared under the influence of holding company officials. The commissions determining issue prices may, therefore, be compelled to rely on statements of the interested parties, the managers of the utility, and bankers. Thus, though commissions state that a number of factors are considered when fixing the minimum price for each security issue, it is very probable that the majority of minimum prices are fixed by a more expedient method.

After a study of many cases, during the period 1924-1928 inclusive, wherein application had been made for issue at a certain price, it is apparent that with few exceptions commissions fixed a minimum price which coincided with the issue price stipulated in the application. Exceptions to this practice have been cited in support of the factors given above, which commissions claim are determinative in each case. It may be that commissions consider such factors when approving the application price. Evidently, then, commissions generally believe that the tentative sales prices placed before them for approval are fair, and represent the best attainable by the utility. Thus, the minimum price fixed by the commission usually becomes the maximum price received by the utility for its securities.

It may be claimed that the prices stipulated by the applicant companies are the best obtainable by them. In such a case there is no need for the regulation of the issue prices of securities by commissions. However, when it is known that most of the present financial operations of public utilities are carried on through allied or affiliated interests, it seems that security regulation should necessarily include control of sales of securities. The control exercised should bring careful scrutiny into the attendant circumstances of each issue with the

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[18] Reference to (4), (5), (6), and (7) may be found in *Report*, Commission on Revision of the Public Service Com. Law (N. Y.) 1930, p. 135, and to letters from commissioners.

elimination of all tendencies toward casual approval or "rubber stamping."

Accuracy of Minimum Prices Fixed

In order to determine to what extent minimum prices fixed by commissions approach the actual selling prices of the issues authorized, a study was made of bond issues authorized during the period 1924-1928, inclusive. Information concerning securities other than bonds, and, in some cases, no-par stock was not available. Only long-term issues of 10 years or more and, for the most part, of more than $2,000,000 in principal amount were considered. This period and this type of issue were selected because a great amount of financing was undertaken during the period and a considerable amount of information could be obtained concerning the larger issues.

Data concerning the authorized prices have been obtained from commission reports or by letter from state commissions. The facts concerning prices of securities offered by brokers to the public were obtained from issues of the *Commercial and Financial Chronicle* and the *American Bankers Association Journal* in listings of new capital flotations for the period 1924-1928.

During the period studied 173 bond issues were found to be authorized at minimum prices by those commissions about which it was possible to obtain information. The brokers' offering price was found for 100 of the number. Table I gives the details for each particular issue.

Table I may be condensed into averages by finding the average difference between the authorized price and the brokers' offering price to the public, weighted by the size of the issue. Table II gives the weighted average spread for the issues of each year and also for the total issues completed.

In order to estimate the amount of the spread between the authorized price and the selling price of the bonds to brokers, it is necessary to deduct the brokers' mark-up from the average spread in Table II or from the spread between the minimum price and brokers' offering price for each issue in Table I. It is recognized that the brokers' mark-up may change with the circumstances of each case, but an attempt was made to determine the average mark-up on securities of this type for the period under review. The mark-ups included in the offering price of 48 issues of securities, for which the selling price to brokers could be obtained, were averaged.[19] The weighted average mark-up as computed in the above case is found to be 3.55 points. This figure was checked by questioning a number of investment banking houses as to its correctness.[20] Though stating that it was misleading to speak in terms of averages, they considered 3½ points to be fairly typical and approximately a correct average of the brokers' gross profit for public utility bond issues of the type under consideration.

If a spread of 3.55 is attributable to brokers' gross profit, then the average spread because of a difference in the authorized price and the selling price to brokers is 1.44 for 1924, 1.83 for 1925, .96 for 1926, .86 for 1927, 2.76 for 1928, and 1.39 for the total issues as given in Table II above. From these figures, there appears to be, on an average, no pronounced difference in the price at which commissions authorize bond

[19] The selling prices for these security issues were obtained from reports of the Federal Trade Commission, covering many issues of utilities not under the control of a public service commission.

[20] Coffin and Burr, Lee Higginson & Co., Bonbright & Co., Chase Harris Forbes Corp., Halsey, Stuart & Co.

TABLE I. SALES OF UTILITY CORPORATION BONDS SHOWING THE DIFFERENCE IN THE MINIMUM PRICE AUTHORIZED BY STATE PUBLIC SERVICE COMMISSIONS AND THE OFFERING PRICE TO THE PUBLIC BY BROKERS.

Date Decided	State Commission Case No.	Name of Utility	Amount	Interest Rate (%)	Minimum Price Set (1)	Offer Price to Public (2)	Spread between (1) and (2)	*Commercial and Financial Chronicle* Date
		NEW YORK						
3- 5-24	1,821	Syracuse Lighting Co., Inc.	$ 7,000,000	5½	$ 92	$ 97	$ 5	3-29-24
10-30-24	2,200	Brooklyn Edison Co.	25,000,000	5	95	100	5	11-22-24
12- 4-24	2,281	Adirondack Power & Light Co.	2,000,000	5½	96	100	4	1-24-25
6-25-25	2,607	Catskill Power Corp.	2,500,000	5½	90	95	5	7-25-25
2- 5-25	2,334	Consolidated Gas of N. Y.	50,000,000	5½	95	100	5	3-28-25
2- 5-25	2,335	The New York Edison Co.	50,000,000	5	97	100	3	3-28-25
4-23-25	2,518	Niagara, Lockport and Ont. Power	15,000,000	5	95	98½	3½	4-25-25
12- 3-25	2,177	The Brooklyn Union Gas Co.	11,800,000	5½	100	100	0	1-23-26
7- 2-25	2,597	The Long Island Light Co.	4,000,000	5	94	100	6	8-22-25
1- 7-26	2,985	Adirondack Power & Light Co.	5,000,000	5	92	96¼	4¼	1-23-26
1-28-26	3,008	Buffalo General Electric Co.	10,000,000	5	96	99	3	2-27-26
4-22-26	3,148	Utica Gas & Electric Co.	6,000,000	5	94	100	6	6-26-26
12-16-26	3,727	Central Hudson Gas & Electric	8,000,000	5	95	101½	6½	4- 1-27
8- 4-27	4,163	New York Steam Corp.	3,572,200	5	90	100½	10½	4-23-27
3-30-27	3,927	Queensborough Gas & Electric Co.	4,000,000	5½	100	100	0	5-21-27
2-28-28	4,581	Rochester Gas & Electric Co.	6,000,000	4½	97	99½	2½	3-17-28
		INDIANA						
3- 6-25	7,914	Indiana & Michigan Electric Co.	8,000,000	5	85	95½	10½	3-28-25
1- 8-27	8,727	Indianapolis Power & Light Co.	30,000,000	5	93	98	5	2-26-27
12-23-27	9,030	Indiana Service Corp.	5,000,000	5	88	99½	11½	3-17-28
3-28-28	9,294	Indiana Hydro Electric Power Co.	3,000,000	5	95	99½	4½	6-16-28
2-15-28	9,233	Interstate Public Service Co.	12,554,000	4½	90¾	94½	3¾	4- 1-28*
		OHIO						
4- 8-24	3,085	The Columbus Ry. P. & L. Co.	2,250,000	6	95	100	5	5-31-24
6- 5-24	3,162	The Ohio Power Co.	2,466,000	6	85	91	6	6-28-24
2-27-25	3,464	The Northern Ohio Trac. & Light Co.	2,500,000	6	87¾	97½	9¾	2-27-26
10-15-26	4,446	The Cleveland Electric Illum. Co.	10,000,000	5	99½	102½	3	11-20-26
5-26-26	4,262	Northern Ohio Power & Light Co.	7,500,000	5½	87½	92½	5	11-20-26
7-26-27	4,407	The Col. Railway Power & Light	20,000,000	4¼	90	93¾	3¾	9-17-27
4- 7-27	4,694	The Cin. Street Railway Co.	7,000,000	5½	96	100	4	May, 1927*
10-17-27	4,904	The Ohio Power Co.	19,720,000	4¼	90¼	96	5¾	3-17-28
4-27-28	5,117	The Cincinnati Gas & Electric Co.	3,500,000	4	89½	92½	3	5-19-28
1- 4-28	2,406	The Cleveland Union Term. Co.	5,000,000	4½	98	102	4	Mar., 1928*
		CALIFORNIA						
3- 1-24	9,571	East Bay Water Co.	2,000,000	6	95½	99½	4	4-26-24
2-11-24	9,726	Market St. Railway Co.	13,000,000	7	93	100	7	2-23-24
2-27-24	9,367	Key System Transit Co.	2,500,000	6	96	99½	3½	4-26-24
3-14-24	9,874	Southern California Edison Co.	14,000,000	6	95	99	4	4-26-24
4-15-24	9,964	Pacific Gas & Electric Co.	12,500,000	5½	92½	96	3½	5-31-24
5-31-24	10,057	California Oregon Power Co.	2,500,000	6	95	99½	4½	6-28-24
9-27-24	10,468	Southern California Gas Co.	2,000,000	5½	93½	100	6½	3-27-26
3- 5-25	14,638	California Oregon Power Co.	2,000,000	5½	93	97½	4½	4-25-25
2-11-25	10,812	East Bay Water Co.	3,000,000	6	98	101½	3½	3-28-25
5-27-25	14,979	Great Western Power Co.	7,000,000	5½	94	99	5	7-25-25
9-15-25	15,394	Feather River Power Co.	5,500,000	6	90	100	10	12-26-25
5-26-25	14,974	Los Angeles Gas & Electric Corp.	2,952,000	5½	95½	100	4½	6-27-25
2- 3-26	12,928	Key System Transit Co.	2,500,000	5½	94	97½	3½	3-27-26
2- 8-26	12,481	Southern California Gas Co.	2,000,000	5½	95	100	5	3-27-26
4-26-26	16,577	Pacific Gas & Electric Co.	10,000,000	5	94½	98½	4	5-22-26
7- 3-26	17,064	East Bay Water Co.	4,265,000	5	94	97½	3½	8-21-26
5-27-26	16,781	Southern California Edison Co.	40,000,000	5	94½	98½	4	7-24-26
11-30-26	17,688	San Joaquin Light & Power Co.	2,500,000	5	95	98½	3½	2-26-27
1- 7-27	17,853	Southern California Edison Co.	15,000,000	5	95	98½	3½	2-26-27
2- 2-27	17,951	Los Angeles Gas & Electric Co.	10,000,000	5	94½	98½	4	3-19-27
12-23-27	19,161	California Water Service Co.	6,282,000	5	92	103¼	11¼	5-19-28
10-28-27	18,918	Southern California Gas Co.	8,646,000	5	94	99	5	11-12-27
9-13-27	18,787	Southern California Edison Co.	30,000,000	5	97	100	3	10-15-27
9-19-27	18,815	Pacific Gas & Electric Co.	15,000,000	4½	93	96	3	10-15-27
10-25-27	18,962	California Oregon Power Co.	4,000,000	5½	94½	98½	4	12-17-27
1-31-28	19,301	Southern Counties Gas Co.	12,000,000	4½	90½	94¾	4¼	3-17-28
2- 3-28	19,304	Pacific Gas & Electric Co.	20,000,000	4½	96	99	3	3-17-28
		MASSACHUSETTS						
2-15-24	......	Boston Elevated R. R. Co.	2,098,000	...	100	103	3	3-29-24
12-29-27	......	Boston Consolidated Gas Co.	10,500,000	5	100	100	0	2-26-27
		MICHIGAN						
10- 9-24	1,282	Detroit Edison Co.	12,500,000	5	94½	97½	3	11-22-24
6- 5-25	1,282	Detroit Edison Co.	8,000,000	5	90½	99½	9	7-25-25
3- 4-26	273	Detroit City Gas Co.	10,000,000	5	92	100	8	Jan., 1927*
5-15-26	688	Indiana & Michigan Electric Co.	3,283,000	5	88	98	10	7-24-26
6-17-26	1,282	Detroit Edison Co.	15,000,000	5	98½	101½	3	4-24-26
8- 3-27	1,282	Detroit Edison Co.	20,000,000	5	99½	102¼	2¾	8-13-27
6-21-27	273	Detroit City Gas Co.	7,500,000	5	95	100	5	8-13-27

TABLE I.—*Continued.*—SALES OF UTILITY CORPORATION BONDS SHOWING THE DIFFERENCE IN THE MINIMUM PRICE AUTHORIZED BY STATE PUBLIC SERVICE COMMISSIONS AND THE OFFERING PRICE TO THE PUBLIC BY BROKERS.

Date Decided	State Commission Case No.	Name of Utility	Amount	Interest Rate (%)	Minimum Price Set (1)	Offer Price to Public (2)	Spread between (1) and (2)	*Commercial and Financial Chronicle* Date
		NEBRASKA						
5-12-25	1,634	Twin State Gas & Electric Co.	1,391,300	5½	89	95½	6½	7-25-25
8-29-27	6,841	Iowa Nebraska Light & Power Co.	12,000,000	5	92½	96½	4	9-17-27
11- 3-27	6,970	Omaha & Council Bluffs R. R. Co.	2,000,000	6	93½	100	6½	12-17-27
		NEW JERSEY						
3- 5-25	1,229	Jersey Cent. Power & Light Co.	12,171,500	5½	90	97½	7½	4-25-25
8- 5-27	1,436	Atlantic City Electric Co.	2,762,000	6	94	100	6	11-12-25
		ILLINOIS						
1-15-26	15,997	Commonwealth Edison Co.	15,000,000	4½	90	93	3	2-27-26
2-15-26	16,036	Public Service Co. of N. Ill.	7,500,000	5	91	98½	7½	3-27-26
12-16-26	16,827	Illinois Power & Light Corp.	7,500,000	5	92	97	5	1-22-27
7-21-26	16,529	Public Service Co. of N. Ill.	10,000,000	5	95	99½	4½	Jan., 1926*
3- 2-27	17,055	Commonwealth Edison Co.	15,000,000	4½	92	96	4	4-23-27
1-26-27	16,997	Illinois Power & Light Corp.	9,500,000	5	90	96½	6½	2-26-27
6-16-27	17,353	Illinois Power & Light Corp.	4,000,000	5	91	97	6	7-16-27
4-14-27	17,183	Mississippi River Power Co.	3,000,000	5	92½	96¼	3¾	7-16-27
12-15-27	17,881	Cent. Illinois Public Service Co.	29,000,000	4½	91	94¾	3¾	1-21-28
11- 2-27	17,736	Illinois Power & Light Corp.	5,000,000	5	91	98	7	12-17-27
9- 6-28	18,588	Illinois Power & Light Corp.	10,000,000	5	91½	96	4½	10-13-28
11-21-28	18,726	Public Service Co. of N. Ill.	10,000,000	4½	87	94½	7½	12-15-28
3-28-28	18,136	Super Power Co. of Illinois	10,000,000	4½	89	98½	9½	5-19-28
4-25-28	18,192	Illinois Power & Light Corp (no par preferred stock)†	3 68,620 shares	7	89.52	100	10½	5- 3-28
		NEW HAMPSHIRE						
10-18-28	2,039	Bellows Falls Hydro Electric Corp.	9,000,000	5	91	98	7	11-10-28
		WISCONSIN‡						
2- 1-24	......	Wisconsin Electric Power Co.	9,000,000	5	85	91¼	6¼	3-29-24
9-15-24	......	Interstate Power Co.	6,000,000	6	90	96	6	10-25-24
12-12-24	......	Chicago, N. S. & Milwaukee R. R. Co.	7,000,000	6	90	98	8	1-24-25
10-31-25	......	Madison Gas & Electric Co.	2,800,000	5	96	98.6	2.6	12-26-25
12-22-25	......	Wisconsin Public Service Corp.	2,750,000	5½	90	97	7	12-26-25
6- 4-26	......	Consolidated Water Power Co.	2,000,000	5½	95	100	5	6-26-26
11-18-26	......	Lake Superior Dist. Power Co.	3,534,000	5	93	98	5	12-18-26
2-21-27	......	Milwaukee Gas Light Co.	11,500,000	4½	90.35	93.75	3.4	3-19-27
5-17-27	......	Wisconsin Michigan Power Co.	5,000,000	5	90	99	9	7-16-27
11-11-27	......	Wisconsin Hydro Electric Co.	2,000,000	5	90	95½	5½	12-17-27
11-25-27	......	Wisconsin Power & Light Co.	2,200,000	5	90	101½	11½	1-21-28
11-25-27	......	Wisconsin Power & Light Co.	4,150,000	5	97½	101½	4	1-21-28
12-17-28	......	Wisconsin Power & Light Co.	2,500,000	5	95	100	5	1-19-29

* Reference is made to the *American Bankers' Journal* as a source for the broker's offering price rather than to the *Commercial and Financial Chronicle*.

† This item of preferred stock is the only one for which it was possible to secure complete details and, since it is rather inconsequential, it does not invalidate the title of the table which refers only to bonds.

‡ The Wisconsin Commission furnished the information regarding the issues of securities by the Wisconsin utilities, by letter, December 22, 1931.

issues and the price at which they are sold to bankers. The larger spread for 1928 is the result of several large issues with a spread considerably greater than the average. The small average spread tends to support the conclusion that commissions set a minimum price, which is in effect a maximum price and which has been predetermined by the soliciting public utility. The fact that a great number of the issues studied were authorized by the more vigilant state commissions, such as California and New York, tends to make the discrepancy between the authorized and selling prices less. Averages may be misleading since, in many cases, the spread may be large, while in other cases there may be no spread nor brokers' mark-up to be considered. An average brokers' mark-up may not apply to individual cases.

Of the 100 cases studied, the spread between the authorized selling price and the brokers' offering price to the public was below 3.55 in 26 cases. In 49 cases the spread was 5 or above, and

TABLE II. AVERAGE DIFFERENCE IN AUTHORIZED PRICE AND BROKERS' OFFERING PRICE OF PUBLIC UTILITY BOND ISSUES

Year	Principal Amount of Bonds	Number of Issues	Average Difference in Authorized Price and Brokers' Offering Price per $100 Principal Amount
1924	$123,814,000	17	$4.99
1925	167,364,000	17	5.38
1926	181,582,000	22	4.51
1927	323,332,200	31	4.41
1928	140,416,000	13	6.31
Total	$936,508,200	100	$4.94

in 12 cases 9 or above. In the latter 12 cases the total principal amount involved was $92,328,690. If a brokers' gross profit of 5 points is considered, there would be a spread of 4 points or above 4 points in some cases as the difference between the authorized prices and selling prices to brokers on the amount given above. The spread figured on the total amount of bonds included in the study totals $13,017,463.98. The average spread of 1.39 is not so significant as the manner in which the amount of $13,017,463.98 is apportioned among the several issues. This merely emphasizes the fact that in some cases, involving a large amount of securities, the operating utility would be considerably injured if it were to receive only the minimum price authorized by the commission in consideration for its securities. A specific example may illustrate the point. In 1926 the Ohio Power Company was authorized to issue $9,635,000 of 4½% bonds at 80.[21] Subsequently, the bonds were sold by the Electric Bond & Share Company to Dillon, Read & Company at 90.[22] In such a case there would be a loss of 10 points per $100 principal amount to the Ohio Power Co., if it were to receive only 80 for its bonds.

The Holding Company

If the bonds are marketed by a holding company at a price in advance of the authorized price, the operating company will be injured if it receives only the authorized price. If the holding company should be disposed to burden its subsidiaries in this manner, taking profits on security sales rather than through the earnings of their holdings, an injury would result to the operating company in the form of increased capitalization and excessive fixed charges. To prohibit such manipulation public service commissions have fixed minimum prices rather as a maximum price in order that the operating utilities will receive full value for their securities.[23] The fixing of the issue price as a maximum, in most cases, results because the contract price or tentative sales price suggested by the issuing company is the usual price fixed as a minimum price. Evidently the commissions are satisfied that this method of fixing an issue price will bring the greatest amount of capital funds to the utilities for their securities. Under such conditions there would be less chance for sale of the securities at a price which would leave a large margin between the authorized price and sales price, as profit to interested bankers or groups that control the policies of the operating utilities. How-

[21] *Annual Report*, Ohio Public Utilities Commission, Orders No. 42797, No. 4280 to No. 4285 inclusive, July 1, 1926.

[22] Federal Trade Commission Reports and Exhibits on the Electric, Power and Gas Utilities, 70 Cong., 1 Sess. Senate Document 92, Parts 23 and 24, p. 682.

[23] In cases involving the sale of securities by the operating utility to the parent company, commissions have fixed a minimum price at a point high enough to insure that the operating company would receive adequate consideration for their securities. See *Re N. Y. Rapid Transit Corp.* (N. Y.), P. U. R. 1928 B 274; *Re Tidewater Toll Properties, Inc.* (Md.), P. U. R. 1931 B 135; *Re Star Auto Stage Co.* (Cal.), P. U. R. 1922 B 491.

ever, it is well to note that these controlling interests may be responsible for the contract price or tentative sales price upon which commissions fix a minimum price in the first instance. This is particularly true if a holding company has virtually the same management as the operating company or exerts full ownership. Hence, a holding company might attempt to obtain a profit by placing the application price as low as possible.

Use of the holding company device as a means of effecting questionable financial maneuvers is seen in efforts to circumvent the limitations on the sale of stock of par value for not less than par. Though discounts on the sale of stock are not allowed, commissions on the sale of stock are allowable. A method was devised whereby discounts were made to appear in the guise of commissions paid out. In order that the operating company's books might show discount as commission, several contracts are necessary in regard to the sale of an issue of stock. As an example, the Knoxville Power and Light Company, in December, 1924, sold an issue of 5,000 shares of 7% cumulative preferred stock at 91½. A contract was entered into with the Electric Bond and Share Company, its parent company, whereby the Knoxville Company would pay a commission of $8.50 per share to the Electric Bond and Share Company to find a purchaser for the 5,000 shares at par. The Electric Bond and Share Company entered into a contract with the National Power and Light Company, a sub-holding company, stating that if the latter would subscribe to the 5,000 shares of the Knoxville Power and Light Company at par, the Electric Bond and Share Company would pay a commission of $6.50 to the National Power and Light Company. Thus, the Electric Bond and Share Company retained $2.00 per share of the $8.50 per share paid by the Knoxville Company as commission for finding a purchaser for the stock, and $6.50 was turned over to the National Company as a discount on the purchase. Subsequently, the National Power and Light Company subscribed for the stock at par and sold the stock to the Old Colony Trust Company and W. C. Langley & Company at $93.50 per share.[24]

The net result of the above transaction enabled the Knoxville Power and Light Company to record receipt of $100 per share for its stock and to capitalize the $8.50 per share paid to the Electric Bond and Share Company and to the National Power and Light Company as "organization expense." The actual sales price for its securities was $93.50 per share, the amount paid by the investment bankers, less the $2.00 commission paid to the Electric Bond and Share Company.

A great many cases similar to the one cited are on record.[25] The discount involved in the sale of stock in this manner is usually charged to an organization, or to some suspense account, which is cleared so that it eventually rests in the property account.[26] Thus there is possibility of its being included in the rate-base on which a fair return is computed.

Commissions have experienced difficulty in ascertaining all the facts surrounding the issue of securities in

[24] Federal Trade Commission Reports, *op. cit.*, Parts 23 and 24, Exhibit No. 4606, p. 650.

[25] *Ibid.*, Parts 23 and 24, Exhibit No. 4606, p. 656, 688, Exhibit No. 4621, p. 797, 802, Exhibit No. 4632, p. 1141 to 1143; Part 26, Exhibit No. 4711, p. 484 to 486; Part 25, Exhibit No. 4676, p. 721, Exhibit No. 4677, p. 759, Exhibit No. 4678, p. 816 to 820; Part 30, Exhibit No. 4793, p. 214, 225, Exhibit No. 4794, p. 352, 353.

[26] *Ibid.*, Parts 31 and 32, Exhibit No. 4833, p. 506, 512 to 514. See also disposition of the discount in cases cited in note 25 above.

exchange for property and /or securities. The most common method of acquisition of properties and formation of holding companies has been by the exchange of securities and properties through the agencies of sub-holding companies formed for that purpose. Many of these exchanges have been accompanied by write-ups of the properties or securities involved in the transactions. Cost prices are lost sight of, and the details of the transactions are hidden by dealing through intermediaries.[27]

Where exchange transactions occur after write-ups of the securities and /or properties received for the securities of an operating company, a discount may be involved depending on the validity of the write-ups. Whether a discount is involved or not depends on the relation of the write-up price to the valuation placed by the commission on the securities and /or properties received by the operating company. If the write-ups increase the price to a figure in excess of the amount at which the commission values the securities and /or properties, then there is a discount, in effect, of the securities issued by the operating company, if the par amount issued is equal to the write-up price.[28]

In all cases where commissions authorize securities to be issued for properties and /or securities, the adequacy of the consideration received by the operating company must be determined. It seems that public service commissions have authorized securities, in many cases, where they have not been acquainted with conditions or where they have not been able to ascertain the value of the property and /or securities exchanged for securities issued by operating companies under their jurisdiction. To judge the value of such consideration, the commissions would have to inquire into the earnings and investment in property, reproduction costs of properties, selling price of the securities on the market, and such factors as commissions contend that they consider when determining the value of the operating company's stocks or bonds in order to arrive at a minimum price. Such an investigation may be and is, in most cases, of such complexity that commissions could hardly be expected to exercise effective control if such control depended on full knowledge of all facts. Commissions are handicapped on account of inadequate resources and personnel. They do not have access to the accounts and records of holding companies and are in no position to ascertain the manner in which the holding company has acquired its properties and /or securities; or the cost, write-ups or write-downs in each case. The problem is accentuated by the ownership in widespread properties represented by holding company securities, the lack of jurisdiction over foreign corporations, and the absence of any uniformity among the several states in regard to control of capital issues of public service corporations.

Suggested Changes

The problems regarding adequate control of the issue price of securities have been outlined in some detail. How are

[27] A list of references showing the above mentioned practices of utility holding corporations follows:

Ibid., Part 25, Exhibit No. 4654, p. 275, Exhibit No. 4653, p. 155, 160, 272-300; Part 26, Exhibit No. 4712, p. 457-467, Exhibit No. 4711, p. 436-492, Exhibit No. 4704, p. 87; Part 27, Exhibit No. 4722, p. 216-276; Parts 31 and 32, Exhibit No. 4834, p. 662-663; Part 22, Exhibit No. 4528, p. 846-847, 665, 766-767. See also *Report, House Committee on Investigation of Public Service Commission and Public Utility Companies Under Resolution No. 10* (Pa.), 1930, c. 12.

[28] Federal Trade Commission Reports, *op. cit.*, Part 22, Exhibit No. 4543, p. 951.

they to be solved? The following suggestions may be worthy of consideration in a program looking toward their solution. First, would it be advisable to remove the restrictions requiring that the sale of stock be made for not less than par?[29] These laws are not enforceable unless the stocks of the utilities are maintained on the market at par. To maintain the stocks of the utilities on the market at par, it is necessary that rates be prescribed which will enable the utilities to show adequate earnings or pay adequate dividends. Earnings must be made or dividends must be paid on stock outstanding that will maintain it at par, and similar dividends or earnings will be expected by those who invest in new issues at par. Since rates are prescribed on another basis, it seems that the stock of a utility which cannot be sold for par should be allowed to be sold for less than par, making provision, as in the case of bonds, for amortization of the discount. This procedure would go far toward eliminating the necessity of resorting to devious ways of selling stocks whereby stock discount is capitalized as organization expense. Finally, the sale of stocks at a discount may be advantageous, especially when the corporate structure is already overloaded with bonds or unfunded debt. In Massachusetts, according to Barnes, where restrictions have been most stringent in this respect, the commission has been faced with the necessity of allowing great amounts of floating indebtedness to be funded in stocks or bonds. In this way the expenditure is not approved in the first instance by the commission, but in order to maintain the service of the company later funding is necessary.[30] It should be the policy of the commissions and company managers to maintain such a credit position for the utilities that their securities will always command par; but, if this is not the case, it may be true that greater injury may be caused by refusing authority for sale of stock below par than if a reasonable discount is allowed. If the investor does not readily understand the purpose of the amortization of stock discount and the fact that the rate of return should be modified in recognition of the discount amortized,[31] an alternative is the use of no-par stock. By the use of this type of stock the capital stock accounts should record the dollars invested in the utility.

Second, would not stricter control be instituted if in every case approval were made of the actual contract price which is the result of the negotiations carried on by the utility for the sale of its securities? This procedure would differ from the present practice in that no price is fixed as a minimum, and tentative sales prices are not approved; but

[29] See Barnes, Irston R., *Public Utility Control in Massachusetts;* (New Haven: Yale University Press, 1930); Bonbright, J. C., *Railroad Capitalization*, (New York: Columbia University Press, 1920); Dewing, A. S., *The Financial Policy of Corporations*, (New York: Ronald Press, 1920).

[30] Barnes, *op. cit.*, p. 197.

[31] "Much confusion has come in at this point over the question of securities sold at a discount. One set of people contend that every such transaction represents a capitalization watering operation, another that the discount is a necessary part of the cost of construction. Neither is right, as a great many people, including both the managers of some corporations, and also some public service commissions are well aware. The discount has nothing to do with capital cost but is simply and entirely deferred interest and represents part of the investor's estimate of the risk involved. The discount has to do entirely with the question of adequate return and not at all with the question of fair capitalization. Though it may conceivably be a matter of public concern as to how far it is desirable to go in deferring interest this way, such deferred interest should be confined to its proper place in a discussion of return on capitalization, and not be allowed to confuse by coming in at the wrong point. It may be remarked, however, that the various statutory provisions against selling securities at a discount have an element of stupidity in them."—Lyon, Hastings, *Corporation Finance*, (Cambridge: Houghton Mifflin Co., 1916, p. 233).

the utility must receive the commission's approval of an offered price before concluding the sale. If it were desired, the commissions could authorize the issue as to purpose but reserve final authorization until a sale price which met with the approval of the commission had been offered the utility. In such a manner the utility could make negotiations for sales either before presenting the application to the commission or after preliminary authorization has been made. The sales price could be rejected if, in the opinion of the commission, the funds were to be obtained at a greater cost than necessary. Their opinion would necessarily have to be based on the financial condition of the utility and the general conditions of the investment market. However, the reports to be relied upon for the above information would have to be trustworthy and immediately available, as could be provided for in the control of accounts.

A third suggestion concerns the control of reports and accounts of utilities. Is it possible to obtain adequate control of utilities without any strict and thorough control of their accounting? No commission can be expected to judge whether a particular sales price for the securities of a utility represents a fair price without having reliable information concerning its history, its present financial condition, and its prospects for the future. In order to make rational decisions, the regulatory body must insure that it has considered all facts which would influence the decisions. To secure adequacy and authenticity of information it is necessary to subject the accounting records of utilities to rigid supervision. Only in this way can commissions discover whether their orders are being obeyed. With regular field audits there would be less juggling of accounts. The amount received for securities, expense of sales, discounts, application of proceeds, and amortization of discounts and expenses could be checked to confirm reports made by utilities. Uniformity of control in all states and over all utilities would be desirable for purposes of comparison and exchange of information between states. Development of accounting control in this manner would strengthen control of rates, services, and other matters as well as provide the basis for regulation of financial transactions.

Finally, can effective control over the issue price of securities be achieved unless the transactions between operating and holding companies are subjected to inspection and regulation by commissions? (The type of regulation and possible means of bringing about effective control of holding companies are not within the province of this paper.) It seems that this action is necessary in order to determine the costs of services rendered to operating companies by holding companies and the basis for exchange transactions. Such information would be of material benefit to commissions in marking out the course of regulation and in placing an estimate on the effectiveness of control exercised. Orders of commissions could not be easily circumvented by intercorporate transactions and regulation could be administered with greater ease.

The suggestions advanced here may indicate some possible avenues of approach to more effective control of the issue price of public utility securities but they, like all proposed changes in regulatory method, must first be carefully scrutinized as to their workability and their probable effects in operation.

Comments on Legislation and Court Decisions

Comments on "What Is the Matter with City Planning?"

IN the August issue of this *Journal* Mr. Herbert S. Swan of New York made a useful and original contribution to various important phases of the higher strategy of city planning.[1] Several of his assumptions and recommendations, however, illustrate trends of thought which are becoming more and more common among both city planners and specialists in municipal government. These trends have gone unchallenged until they are becoming dogma to casual students, and it is now high time to analyze them in the light of the way in which things actually work, not as they ought ideally to work, in our urban areas.

First and foremost, Mr. Swan demands extension of one city government over the entire planned area, primarily in the sacred cause of unified or regional planning but buttressing his argument by pointing out, correctly, that the suburban trend to separate satellite municipalities deprives the parent city of many of its best voters. Thereupon he makes a large assumption; namely, that the re-absorption of these comparatively few voters would improve city government. If space availed, it could be strongly argued that the "decent voter's" ability to control the government of cities is becoming more and more mythical; recent developments indicate that business, banking, and industrial forces will have to take over that job for their own salvation. This, however, is a digression. The fact remains that for a dubious advantage to the city Mr. Swan, and those to whom simplification of government is a panacea, would sacrifice the home rule of the best suburbs which generally get more for their tax dollar, have better schools, and arouse a civic pride and civic interest among their inhabitants which would be largely lost and dissipated in a greater area.

Indeed it is possible on this score to meet Mr. Swan on his own ground. Certainly the better suburbs have protected themselves more vigorously against zoning deviations, against jerry-built apartment houses, than have the larger cities. Likewise, their zoning boards of appeal, functioning before the interested and well-informed gaze of their neighbors, have been far freer from favoritism, scandals, and corruption, which in this field appear to increase with the size of the city and which constitute a startling difficulty in the whole administration of zoning—a difficulty, incidentally, to which the city planners in their concern with greater things seem to have paid very little attention. And where a suburb has opposed a "comprehensive" plan, how often has this been sheer contumacy and how often perhaps a reasoned, even if selfish, objection to having one of its quiet and beautiful, even if unplanned, streets or neighborhoods turned into a roaring highway for the alien motorist.

Secondly, Mr. Swan wants the city plan commission, now generally only advisory, to have executive powers. But

[1] "What Is the Matter with City Planning?", 8 *Journal of Land & Public Utility Economics* 248–260 (August, 1932).

it is largely because the typical plan commission lacks either patronage or the award of contracts that the typical political machine has allowed it to be composed of "pro bono publicos." Give it these powers and it will practically replace your board of local improvements, becoming an aggregation of political small fry, a part of the machine. Indeed, as first the public, then the politicians, and finally the city planners gradually realize, every desirable improvement cannot be carried out simultaneously or in quick succession, but instead economic stringency will compel a highly competitive selection. Under such pressure it is going to be very difficult to keep even a strictly advisory plan commission from becoming a football of factional and regional city politics. It would be possible, although indiscreet, to point this argument with a very present and exact illustration.

Third, Mr. Swan laments the difficulty of getting public improvements which are part of the general plan put into execution. To tens of thousands of urban property owners everywhere, weighed down under staggering bills for special assessments, this will be news indeed. It has rather been their observation that however great the legal complications, however hot the politicians' quarrels, the one subject on which it has been possible to compose all differences and surmount all difficulties has been the imposition of a public improvement as a "local benefit". But to the assistance of such backward communities as have left their property owners comparatively unplastered by these liens, Mr. Swan would dispatch a state commission, zealous with power, to impose willy nilly a comprehensive plan and the costs of its systematic execution. Perhaps in the good Commonwealth of Massachusetts one of the towns to receive the early ministrations of such "hot gospellers" would be Fall River which, having gone broke ahead of a number of others, is now creating municipal history by operating under a unique form of city receivership.

Any discussion of "What is the Matter with City Planning?" might fairly include some consideration of the city planners. They have raised themselves speedily to the status of a valuable and respected public profession; they might candidly admit that they have also developed some of the drawbacks as well as the virtues of professionalism. Already among these is traditionalism; their Beaux Arts training against the background of Haussmann's Paris (at first or second hand) prejudices them against the recognition of new forms, new solutions; they seek to apply to American commercial cities the formulae developed in European political capitals. Thus schemes are urged upon us for magnificent and remote civic centers, for water gates, for encircling boulevards (because of the "ring strassen" where mediaeval walls were razed), and —actually one most glamorous of all— for a sort of Place de l'Etoile at a busy, six-cornered transfer center in a Polish district on the northwest side of Chicago!

All this, of course, conforms to Burnham's notable and oft-quoted "Make no little plans," etc. Unhappily the dogmatic devotion of Burnham's disciples to this apostrophe has caused the neglect of many a minor but favorable opportunity for a small square, a pleasant irregularity, a block of arcaded sidewalk. It has also from time to time sealed the doom of a fine historic mansion, like those fronting on Lafayette Square in Washington, which in France might have been preserved to house a small museum or a government bureau, but which failed of protection by those

engrossed in the creation of malls and quarter-miles of classic colonnades.

But to get back to the practical, it is hardly fair to tax the city planners with not counting the costs in the halcyon times when nobody else bothered to do so. But today the property owner has some grievance when he finds the professionals still apparently concerned only with "comprehensiveness" and "long-range programs," instead of concentrating thought upon the neglected topic (recently explored so penetratingly by Professor Simpson) of relating the improvement to the actual rather than to the speculative benefit to the property involved. City planning today suffers not only from the property owner's greed but from the past abuse of his optimism and civic pride.

GRAHAM ALDIS

Mr. Swan's Rejoinder

THAT my article on "What Is the Matter with City Planning?" in the August number of the *Journal* should call forth such a clear, penetrating discussion as is contained in the above criticism by Mr. Graham Aldis is, indeed, very pleasing. On all controversial subjects of this character there are, of course, many different points of view. A definitive program for the final solution of such a question can only be arrived at by studying it in all its different ramifications. My article was frankly intended to be, as it expressly stated, only a provocative statement of the case, so that intelligent criticism might evolve a rational program for the solution of one of the most intricate, and at the same time one of the most vital, problems confronting our cities. As a contribution to this criticism Mr. Aldis' letter is sincerely to be appreciated.

There are, however, certain matters in which I cannot entirely follow Mr. Aldis. At the very outset he makes the mistake of assuming that my article was directed to the large metropolitan area. My discussion was, however, expressly limited to urban areas with a population not exceeding 500,000. Notwithstanding anything in Mr. Aldis' letter, I still maintain that urban areas of not more than half a million population—such as those at Albany, Hartford, Springfield, Mass., Trenton, Harrisburg, Charlotte, N. C., and Columbus, O.—would have very little to lose, but, on the other hand very much to gain, if they were integrated municipalities with the requisite power of dealing single handed with all their problems instead of being obliged, as now, to approach them in a piecemeal way because of the restrictions imposed by satellite communities on the fringe of the parent city.

Mr. Aldis makes much of the high cost of city government and the extravagance involved in many public improvements. Nobody at all aware of the facts would for a moment deny these charges. They are all too true. But Mr. Aldis fails to see that one of the very reasons why they are so true is to be found in the shattered territorial jurisdiction of our cities in the past. Having five or six municipal corporations instead of one never has, and never will, promote governmental economy, but rather the contrary. Integrating an entire urban area under a single municipal corporation would centralize power at the same time that it would fix responsibility.

Nobody, and I least of all, would care to vest a local planning commission with executive powers. A planning commission

should very properly, as Mr. Aldis maintains, have only advisory powers. Yet what is a plan good for if it can be ignored whenever it suits the whims of an administration? But to oblige an administration, whenever it carries out a project, to observe the city's plan is something entirely different from vesting the local city plan commission with executive powers. To restrict improvements to projects incorporated within the city plan will in itself go a long way toward effecting the economy in municipal government so much desired by all taxpayers. Such a policy could only prevent ill-advised and needless improvements. It is difficult to see how the policy could possibly increase the expense of government.

A state board with supervisory powers, and in some cases mandatory powers, over local planning matters is undoubtedly something many people would oppose. Mr. Aldis is in this respect not entirely to be blamed. Mandatory state authority exercised locally against the wishes of the locality itself does not, it is true, constitute a very pretty picture. Unless there is a very good reason for its exercise, most serious minded persons would surely oppose it; indeed, they should oppose it. But what shall we say about the right of municipalities absolutely to ignore many of the most elementary necessities of present-day community life, such as a building code, a zoning plan, regulations controlling land subdivisions, and a score of similar measures? Should any community simply because of an indifferent council be allowed permanently to dispense with such matters? Mr. Aldis would probably say "Yes"; I say, "No." There are some things that a municipality cannot refrain from doing without inflicting irreparable harm upon future generations. Democracy and self-government should be more than mere shibboleths. What goes by these names today is frequently the most abject surrender to either the blindness or the obduracy of a single councilman.

If Mr. Aldis had not rather pertinently raised the relationship of city planners to city planning, I would hesitate to touch upon the subject. But happily he admits that we constitute both "a valuable and respected public profession." Yet he condemns us because of our Beaux Arts training, because of our traditionalism, because of our professionalism. Some individual planner may possibly be subject to all these different disabilities but, if there is such a one, the writer does not know where to find him. Without attempting to palliate the grievous faults either of myself or of my colleagues, these are nevertheless disabilities which I feel cannot properly be imputed to us. Not that I would try to conceal a Beaux Arts training if I had one. As a matter of fact, at the moment I recall but two or three members of the American City Planning Institute who ever saw the inside of the Beaux Arts. None of them hide the fact. Nor would I if I had been as fortunate as they in my early education.

But what of our traditionalism? To find the answer compare any plan of 25 years ago with any plan of today. You would scarcely identify them as treating the same subject. So rapidly have the art and science of city planning developed that it is today one of the most progressive and dynamic subjects in the whole field of municipal government.

Mr. Aldis is especially exercised at some city planner—who it is I do not know—who has had the temerity to suggest a traffic circle at a six-corner intersection in a Polish district on the northwest side of Chicago. If this planner had refrained from recommending a

traffic circle at this point, regardless of its necessity, simply because the district were Polish, he might indeed be accused of a certain kind of traditionalism, but he could hardly be convicted of being a professional city planner. A multiple street intersection should obviously be treated in accordance with its traffic needs and not with reference to the one-time nationality of the residents who may live in the neighborhood.

Despite my disagreement in some particulars with Mr. Aldis, I nevertheless feel that only through such frank criticism as is contained in his letter are some of our most difficult urban problems ever going to be solved in the right manner. HERBERT S. SWAN

Summaries of Research

Cost of Railway Capital*

AT various intervals summaries have been published showing, on the basis of Interstate Commerce Commission reports, the cost of debt capital to steam railway companies in the United States. In general, these summaries have attempted to show, in addition to the volume of such debt financing, the cost of capital to the companies, the yield on securities at the price sold to the public, and measures of the bankers' margins (that is, the difference between the price received by the company and the price at which the securities were offered to the public). In more settled financial markets such data and ratios may have considerable significance in showing the efficiency with which an industry can appeal to the financial markets. Generalization upon the basis of such information is always subject to exception and qualification, and these qualifications become more and more important as customs are thrown overboard in periods of financial stress. The last six months of 1931 and the current year to date have been abnormal to a high degree in the credit and securities market. How do the measures of cost of railway capital behave in such a period?

The combination of a very bad operating situation and a most distressed bond and stock market has pulled down the credit standing of steam railway companies in the United States to the lowest levels in years. From the side of operations the extent of the impairment of earnings is suggested by the fact that the net railway operating income of Class I steam railways (including large switching and terminal companies) declined from an all-time high of $1,275,000,000 in 1929 to $885,000,000 for 1930 (a decrease of 30.5%) and to $537,000,000 (a decrease of 57.8% from 1929) for 1931.[1] This tendency continued for the first six months of the current year when net railway operating income totalled some $113,000,000, a 53.2% decline from $241,500,000 for the corresponding period of 1931.

Decreased and decreasing earnings with gloomy prospects for the future, coupled with apprehension and fear in the securities markets, were both reflected in the market price of steam railroad company securities. Table I summarizes the increase in yields resulting from declines in the prices of railroad bonds. This table gives an idea of the market evaluation of railway credit. Railway credit, according to this picture, broke noticeably in April of 1931, continued on the downgrade until the year-end, recovered slightly in the first part of 1932, and suffered its most serious relapse about the middle of the current year, when the yield on this group of bonds went above 9¼%.

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* See Herbert B. Dorau, "The Cost of Railway Capital Under the Transportation Act of 1920," 3 *Journal of Land & Public Utility Economics* 1-20 (February, 1927); 3 *Ibid.*, 219-221 (May, 1927); 3 *Ibid.*, 427-430 (November, 1927); 4 *Ibid.*, 206-208 (May, 1928); 4 *Ibid.*, 427-428 (November, 1928); 5 *Ibid.*, 203-204 (May, 1929); 6 *Ibid.*, 98-101 (February, 1930); 7 *Ibid.*, 94-97 (February, 1931); and 7 *Ibid.*, 439-442 (November, 1931).

[1] Moody's *Railroads*, 1932, p. xxxiii.

TABLE I. COMPOSITE AVERAGE YIELDS OF 40 RAILWAY BONDS*

	1932	1931	1930
January	7.20%	5.09%	5.00%
February	7.10	5.11	5.02
March	7.04	5.17	4.89
April	8.24	5.45	4.92
May	9.30	5.60	4.91
June	9.14	5.70	4.91
July	8.70	5.62	4.89
August	....	6.01	4.86
September	....	6.43	4.80
October	....	7.20	4.91
November	....	7.28	5.10
December	....	8.46	5.34

*Taken from Moody's, *Railroads*, 1932, p. xxv.

In the light of these conditions what has happened to the cost of railway capital as shown by the yields on issues sold?

Volume of Debt Financing

Table II shows the par value, average yield per dollar at price to the company, and the number of steam railway debt security issues. For all classes of issues this table shows a volume of financing in 1931 of some $478,000,000, which is 50% of the 1930 volume and below any year since 1922 (with the exception of 1926). The volume of bond issues in 1931 was about 50% of those in 1930. Equipment trust issues, that type of financing most directly related to the acquisition of new capital (as contrasted with refunding and intermediate financing operations), showed the greatest drop, from $108,000,000 in 1931 to $13,000,000 in 1932. In all classes of securities much less financing was done during the second half of 1931 than during the first six months.

The volume figures represent issues authorized by the Interstate Commerce Commission; they do not show the volume of securities sold to the public. Some of the securities are acquired by equipment manufacturers, and recently an increasing volume of securities has been sold to other railroad companies, usually parent or holding companies. In the latter case, the issues here included may be pledged as collateral for bank or other loans, and hence eventually represent (although no doubt somewhat inaccurately) railway financing. For the present no analysis was made as to the eventual destination of issues

TABLE II. AVERAGE YIELD AT PRICE TO COMPANY OF ALL STEAM RAILWAY SECURITY ISSUES, 1920*–1931.

	All Classes			Bonds			Equipment Trust Certificates			Miscellaneous†		
Year	Par Value Sold	Average Yield Per Dollar at Price to Company	Number of Issues	Par Value Sold	Average Yield Per Dollar at Price to Company	Number of Issues	Par Value Sold	Average Yield Per Dollar at Price to Company	Number of Issues	Par Value Sold	Average Yield Per Dollar at Price to Company	Number of Issues
1920	$ 54,543,000	7.29%	14	$ 35,719,500	7.34%	5	$ 15,777,000	7.28%	4	$ 3,046,500	6.68%	5
1921	418,494,009	7.21	60	350,944,400	7.23	30	40,741,600	6.76	17	26,808,009	7.64	13
1922	438,895,604	5.86	88	317,582,600	5.92	49	121,236,000	5.71	37	77,004	6.00	2
1923	541,815,632	5.61	109	223,895,300	5.38	38	295,718,000	5.72	57	22,202,332	6.45	14
1924	720,895,793	5.54	135	447,084,800	5.61	70	223,095,000	5.27	38	50,715,993	6.11	27
1925	520,187,740	5.45	157	356,721,845	5.63	85	145,867,076	5.04	46	17,598,819	5.20	26
1926	432,664,310	5.24	168	278,254,600	5.36	71	126,253,500	4.97	37	28,156,210	5.26	60
1927	678,594,790	5.13	165	562,630,500	5.16	78	71,679,000	4.61	24	44,285,290	5.68	63
1928	482,733,287	4.78	127	392,180,100	4.77	61	55,129,000	4.58	24	35,424,187	5.25	42
1929	573,174,734	5.20	135	417,677,500	5.09	62	124,851,000	5.23	31	30,646,234	6.50	42
1930	957,450,467	4.95	147	773,968,504	4.94	81	108,431,800	4.76	22	75,050,163	5.33	44
1931	478,406,480	5.02	114	396,746,337	5.04	58	13,261,000	4.10	5	68,399,143	5.08	51
1931												
1st quarter	82,194,795	4.63	32	65,914,318	4.74	12	7,020,000	4.16	1	9,620,477	4.14	11
2nd quarter	231,563,672	4.79	28	197,338,000	4.72	20	5,689,000	3.93	2	28,536,672	5.39	14
3rd quarter	115,249,194	5.76	30	94,185,200	5.78	14	312,000	4.50	1	20,751,994	5.54	15
4th quarter	49,398,819	5.10	24	39,308,819	5.35	12	314,000	6.00	1	9,850,000	4.10	11
1920-1931	6,297,855,846	5.40	1,419	4,553,405,986	5.40	688	1,342,039,976	5.30	342	402,409,884	5.72	389

* Beginning with May, 1920, the date of the Esch-Cummins Transportation Act.
† Interest-bearing obligations other than bonds and equipment trust certificates, principally notes, debentures and receivers' certificates.

shown in these volume figures. The point to be kept in mind is that these figures do not represent securities sold to the public. This qualification is more applicable to the recent period.

We may perhaps get a rough picture of the volume of public financing by compiling the volume of securities for which offering prices to the public are available (representing issues sold to the public) and comparing this with the total volume of issues put out by the companies (Table III). Particularly in 1932, a large part of the issues were sold to other companies, but not offered to the public. Emergency distress financing has taken the place of public security issues. Bank loans, and more lately loans from the Railroad Credit Corporation and the Reconstruction Finance Corporation, are sources of capital adapted to these emergency conditions. From the date of its initiation, February 2, 1932, to September 30, 1932, the Reconstruction Finance Corporation authorized loans to railroads amounting to $329,619,194.[2] These loans were extended to some 62 railroads, had maturities of one, two and three years, and were made for the purposes of paying short-term loans to banks, etc., to meet maturing obligations, to cover maintenance expenses, operating expenses, and fixed charges, and to finance the purchase of equipment, etc.

TABLE III. PAR VALUE VOLUME OF STEAM RAILWAY DEBT ISSUES, 1920-1932.

Year (A)	Par Value All Issues (B)	Par Value Issues for which Price to Investor is Available (C)	Percentage (C) to (B) (D)
1920	$ 54,543,000	$ 40,007,000	73%
1921	418,494,009	370,343,600	88
1922	438,895,604	395,096,800	90
1923	541,815,632	448,639,000	82
1924	720,895,793	686,270,000	95
1925	520,187,740	432,611,500	83
1926	432,664,310	306,581,000	78
1927	678,594,790	567,527,000	85
1928	482,733,287	392,260,000	81
1929	573,174,734	233,883,000	40
1930	957,450,467	780,401,000	81
1931	478,406,480	365,996,000	76
1932—6 mos.	124,346,844	3,425,000	2

[2] *Standard Railroad Securities*, Vol. 19, No. 144.

Cost of Capital

Table II shows also the cost of capital based on the yield at the price received by the company. These yields increased in 1931 compared with 1930 for "all classes" (4.95% to 5.02%), and for bonds (4.94% to 5.04%), while equipment trust issues declined in yield from 4.76% to 4.10%. In all cases the yields increased in the third quarter of 1931 compared with the second quarter, with all groups except equipment trust issues declining in yield in the fourth quarter compared with the third.

In the interpretation of these yield figures several qualifications should be kept in mind. In the first place, as already mentioned, the average yields include a good many issues sold to affiliated companies. When securities are sold to an affiliated company the sale is very often at par, according to the record used as a basis for this survey. The yield on these issues therefore represents the nominal or coupon rate on the particular issue sold at par. Secondly, since these inter-company sales do not represent sales to the public, these yields do not represent the ability of the companies to go into the markets and sell securities. The general run of railroad companies could never have sold securities on the investment market at any time since, say, March, 1931, on anything resembling the yields shown in Table II. In these cases the market yields give a more accurate picture of the status of railroad credit, and illustrate the extremity of the

TABLE IV. SUMMARY OF COST OF FINANCING EXPRESSED IN VARIOUS WAYS; BY YEARS, AND FOR THE PERIOD, 1920–1931.

Year	All Classes				Bonds				Equipment Trust Certificates				Miscellaneous			
	y-o	$\frac{z}{x}$	$\frac{z}{n}$	Yield Difference	y-o	$\frac{z}{x}$	$\frac{z}{n}$	Yield Difference	y-o	$\frac{z}{x}$	$\frac{z}{n}$	Yield Difference	y-o	$\frac{z}{x}$	$\frac{z}{n}$	Yield Difference
1920	3.66	3.66	3.80	.52	3.47	3.47	3.59	.50	3.98	3.97	4.13	.56	....	....	....	....
1921	4.38	4.51	4.72	.47	4.54	4.68	4.91	.50	2.44	2.44	2.50	.08	2.68	2.78	2.86	.39
1922	3.25	3.36	3.48	.29	3.55	3.69	3.83	.26	2.28	2.30	2.35	.35	....	....	....	....
1923	2.54	2.59	2.66	.32	2.65	2.74	2.82	.16	2.55	2.58	2.65	.38	1.51	1.52	1.55	.67
1924	2.67	2.73	2.80	.24	3.16	3.26	3.37	.23	1.86	1.88	1.91	.08	1.71	1.71	1.74	.86
1925	2.49	2.55	2.62	.24	2.74	2.82	2.90	.21	1.75	1.76	1.79	.31	4.75	4.80	5.04	1.20
1926	2.23	2.28	2.34	.21	2.62	2.69	2.77	.18	1.48	1.50	1.52	.24	1.00	1.01	1.02	.54
1927	2.39	2.46	2.53	.16	2.60	2.70	2.77	.16	.66	.66	.66	.10	2.00	2.02	2.06	.74
1928	2.17	2.22	2.27	.14	2.33	2.38	2.44	.13	.64	.64	.65	.10	1.75	1.76	1.79	.65
1929	1.71	1.79	1.76	.23	2.46	2.59	2.52	.20	.89	.93	.92	.15	2.00	2.00	2.00	.75
1930	2.22	2.27	2.33	.15	2.43	2.51	2.57	.15	.78	.78	.79	.13	1.75	1.78	1.81	.29
1931	2.28	2.32	2.38	.18	2.46	2.51	2.58	.14	.43	.42	.42	.08	1.17	1.17	1.18	.78
1931																
1st quarter	1.90	1.88	1.92	.11	2.10	2.09	2.13	.11	.45	.44	.42	.08	....	....	....	....
2nd quarter	2.20	2.24	2.29	.14	2.38	2.43	2.49	.12	.41	.40	.44	.06	1.00	1.00	1.01	.37
3rd quarter	2.81	2.92	3.01	.35	3.02	3.16	3.26	.15	....	....	....	....	1.50	1.50	1.52	1.58
4th quarter	2.39	2.44	2.50	.21	2.39	2.44	2.50	.21	....	....	....	....	....	....	....	....
1920-1931	2.58	2.65	2.72	.23	2.87	2.95	3.04	.21	1.76	1.78	1.81	.23	1.62	1.64	1.67	.75

y-o is the difference between the average price per hundred received by the company and the average price per hundred paid by the investor.

$\frac{z}{n}$—Ratio of the bankers' share to the actual dollars received by the company.

$\frac{z}{x}$—Ratio of bankers' share to the value of the issue or issues at the price at which the investor absorbed them.

Yield difference—difference between yield per dollar to maturity at price to the company, and at price paid by the investor.

conditions which resulted in emergency legislation. Receiverships have occurred, and more may occur before the industry is re-established in credit standing. The yields for 1932 are so non-representative of capital-raising abilities in the industry that they are excluded from the table.

Cost of Financing

The cost of financing (that is, that part of the cost of capital which accrues to the investment bankers) increased slightly for bonds and decreased for equipment trust obligations, comparing 1931 with 1930 (Table IV). Thus, for bonds the bankers' margin (y-o) rose from $2.43 in 1930 to $2.46 in 1931; for equipment trust issues the margin fell from $.78 to $.43. Generally speaking, bankers' margins increased in the third quarter of 1931, compared with the second quarter, and decreased in the fourth quarter relative to the third.

The margins for 1932 are not included since the price to the public is available for but two issues.

Conclusion

One major conclusion seems warranted. In times of extraordinary economic and financial stress measures of capital cost and financing cost applicable to more settled periods often go awry. Yields on new issues do not represent the true burdens borne by an industry in trouble and to which extraordinary and emergency financing techniques have been applied. Recent experience provides the basis for a most interesting survey of financial practice but for this study different methods and standards must be used. With the return of more normal conditions, established relationships, and public sale of securities, the now obsolete measures may be resurrected with profit.

ROY L. REIERSON
RUTH A. FOLEY

Book Reviews

Raver, Paul Jerome. RECENT TECHNOLOGICAL DEVELOPMENTS AND THE MUNICIPALLY OWNED POWER PLANT. *Chicago: Institute for Economic Research, 1932. (Studies in Public Utility Economics, Research Monograph No. 6.) pp. vii, 87. $1.50.*

Placed against the background of the technological revolutions in the electric light and power industry and viewed in the light of fundamental engineering economics, the municipally owned plant is measured by its performance in continuing to exist. Subsistence levels for municipally owned plants and stability ratios of various types of prime movers in these plants constitute the climax of this sixth monograph in the public utility series published by the Institute for Economic Research. This monograph represents a valuable addition to the controversial subject of municipal ownership. The material and information gathered on the location, size, and type of prime mover represent efforts extended over a period of years. This information is carefully sifted and correlated into an able presentation which clarifies the many factors involved, lays the foundation, and points the way for further research in the field.

The study begins with the year 1903 since complete data for earlier years were lacking. In this year the steam engine was still extensively used in both municipal and private plants. Both municipal and private companies started out as small self-sufficient systems. The development of transmission lines assisted in the movement toward concentrating loads in large modern generating stations and toward interconnecting and merging private companies. This development weakened the competitive position of small plants, both privately as well as municipally owned, and resulted in a large number of them being absorbed into systems or changing from generating to purchasing their electricity supply. Offsetting tendencies are now becoming apparent. At the present time in a number of states legislation is being adopted which will permit interconnection of municipally owned plants into publicly owned power districts, a recognition of the change in engineering practices. In addition, recent improvements in small steam turbines, the uni-flow steam engine, and the Diesel oil engine are strengthening the competitive position of small or self-sufficient municipal plants and assisting them to hold their own against the absorbing tendencies of interconnected systems.

In Chapter III the author has traced in detail the growth in number and horsepower capacity of municipally owned generating plants. The development has been divided into four periods: 1903-1915, 1916-1921, 1922-1927, and 1928-1930. The first period was marked by an extensive growth of the municipal plant. In the second period the rate of growth was considerably retarded. The third period was characterized by an apparent stabilization, although from 1925-1927 a greater loss in number of plants and a greater increase in horsepower were registered in the remaining plants than during any other three-year period. In 1903 there were 912 municipal plants having a combined capacity of nearly 211,000 horsepower, while in 1930 there were 931 plants having a combined capacity of 2,586,959 horsepower. Approximately 85% of this large increase in horsepower capacity since 1903 was attributable to additional units installed in existing plants. Considering the movement into and out of municipal ownership during the entire period, there were 2,806 possibilities for change to private ownership or to a status of purchasing all electricity supply. Actually 66.8% of the plants made the change but this loss in number accounted for only 13.5% of the total possible horsepower. Based upon the trends as revealed in this chapter the author "hazards" the following "guess": "Municipal plants will remain and will continue to grow larger in size. They will thus become more and more important keys in any regional or national plan of power supply."

In Chapter IV the movement toward and away from municipal ownership has been analyzed by major geographic divisions. The influence of the expansion in capacity of a few plants on the Pacific Coast is apparent. It also appears that every region of the country has registered an increase in the number of plants over 1,000 horsepower at

each three-year interval since 1921. In this part of the study the author has indicated that the subsistence level of plants in the Mountain States is 300 horsepower. In the West North Central and West South Central regions plants over 500 horsepower seem large enough to remain independent. In the remaining regions the subsistence level seems to be 1,000 horsepower or over.

Chapter V presents the study of the type of prime movers used in municipally owned plants and the trend toward modernization of plant equipment. From 1903 to 1930 the steam engine declined from a position of importance to a negligible factor; the oil engine increased from 3 plants to 399; and the steam turbine increased to a position representing 35.6% of the total horsepower capacity installed in municipal plants in 1930. The ratio of the horsepower capacity remaining in existence at the end of each period for each type of prime mover to the total horsepower accumulated during the period is termed the "stability ratio." Between 1904 and 1930 the stability ratio of the steam turbine was 92.3%; for the oil engine 76.7%; and for the steam engine 16.9%.

Basically the answer to the question of the economy of municipally owned electric plants as against private operation within a large system lies largely in the inherent technological factors of production, transmission, and distribution. The author admits that comparative economy has not always been the controlling factor but that legal, social, and political considerations often predominate. Taking the movement as a whole, an apparently reasonable assumption is that the statistical results can be interpreted in the light of technological developments. The fact that the results fit harmoniously into the pattern of such developments is a strong argument supporting the conclusions. To arrive at an absolute answer to the technical limitations and advantages of municipal, isolated-plant operation as against private system operation, cost studies under varying conditions and locations would be necessary. Such studies would throw considerable light on the entire problem, although they might not furnish the correct answer to a given specific instance because of peculiar local circumstances. A number of such studies have already been made but unfortunately they are very limited in scope. One factor which must be considered in such abstract studies is the economies possible in the operation of a municipal electric plant jointly with a water utility or other municipal services. Such economies are in addition to the lower overhead management expense usually found in municipal plants.

The accuracy of the conclusions reached in this study is dependent upon the source of the basic information. Every effort appears to have been made to obtain authentic and accurate information. It must be recognized that answers from city clerks as to the capacity and type of prime movers installed in a municipal plant cannot always be strictly depended upon. However, the number of checks that were made of the data removes a large measure of doubt of their reliability as a basis for this study.

This monograph represents an excellent analytical study of one of the most important factors in the controversial field of municipal ownership. It not only presents a picture of the municipal ownership movement that has historic value but, most important, indicates trends which may bear out the author's own predictions.

H. Zinder

Home Design, Equipment and Construction. *Washington: President's Conference on Home Building and Home Ownership, 1932. Volume V, pp. xvii, 325. $1.15.*

This volume contains the reports of the committees on Design, Construction, and Fundamental Equipment. In the vast amount of material represented by the reports to the Conference, comprising 11 volumes and prepared by hundreds of persons of varying points of view, it is not surprising to find some reports of inferior value and some that are downright bunk. This is not the case with Volume V. The reader can expose himself to it without previous prophylactic treatment.

The jerry builders of this country ought to make concerted effort to suppress its circulation. If it is widely read, they are lost. Having digested certain parts of it, the seeker of investment in a home will be very wary of what he buys. Throughout the book the constant emphasis is on quality, not only the quality elements in the equipment and construction, but also in the surroundings of the home. It dispels the notion that a home

is merely four walls, an adequate number of rooms, and a cute little English doorway.

This is highly important, for in the past the home buyer, largely through ignorance, has paid less attention to the quality of the house he bought for $8,000 than he did to the purchase of a suit of clothes for $30. In the report of the Committee on Design, the importance of general neighborhood development is admirably stressed. If Jones starts out to find a home, armed with the score card shown on pages 50-52, he will avoid many mistakes, even though his technical knowledge be extremely limited, and with a little professional advice on the less obvious features of construction, he will be proof against the allurements of the pretty gadgets and fake architectural effects which are the chief bait held out by the cheap speculative builder.

Except for the insistence on the importance of the neighborhood, there is little that is forward looking in the book; perhaps that was not to be expected in a volume which is largely a record of past experience. This does not mean that it has nothing for the architect and the builder. On the contrary, the technician will find it a valuable textbook. The discussions of fundamental equipment and construction are replete with sound common sense and the information on costs, types of dwellings, and trends in recent years will prove to be of real value.

EUGENE H. KLABER

SLUMS, LARGE-SCALE HOUSING AND DECENTRALIZATION. *Volume III, pp. xvi, 245.*

NEGRO HOUSING. *Volume VI, pp. xii, 282. Washington: President's Conference on Home Building and Home Ownership, 1932. $1.15 ea.*

These two reports speak for 112 committee members, secretaries, advisors and research assistants, constituting at that but a small part of the membership of the Conference. All things considered, they are surprisingly forth-right, and not merely such milk-and-water statements as would usually represent the lowest common denominator of the thinking and preconceptions of a large group. Unfortunately, too often the conclusion is merely that one or another problem requires further study or analysis (not that this isn't true of the whole housing field); or that the housing problem is inextricably bound up with the larger problem of the distribution of the national income. One advantage of breaking up the work of the Conference into smaller committees is that each group has been free to pursue to the end its line of attack, without too great a sacrifice in the interest of uniformity or consistency between committees.

The Conference itself was, of course, chiefly a sounding board to carry to the corners of the nation the ideas of leaders in the field. Some of these ideas, as it happened, hardly supported a program of home ownership for two-thirds of the population. The chief value of the final reports is to present a running, if somewhat disjointed, account of American thinking on the subject in the year 1931. A number of special reports dealing with local situations which might be deemed typical have been appended; the committees have been liberal in permitting statements by minority groups (site-value taxation) not necessarily representing the conclusions of the Conference. In the volume on *Negro Housing*, especially, the compilers have had access to numerous unpublished local surveys, the findings of which are thus given a wider circulation, and this volume, too, has a comprehensive bibliography. The reports should prove useful reference works for those seeking an introduction to a multitude of practical aspects of the housing problem.

CHARLES S. ASCHER

DIE ZWECKMÄSSIGEN BETRIEBSGRÖSSEN IN DER LANDWIRTSCHAFT DER VEREINIGTEN STAATEN VON AMERIKA UNTER BESONDERER BERÜCKSICHTIGUNG DER MAISBAUZONE. (The most profitable sizes of farms in the United States with special reference to the Corn Belt.) By Dr. S. von Ciriacy-Wantrup, in "*Berichte über Landwirtschaft*," *51. Sonderheft. Berlin, Paul Parey. 1932. 150 pp. RM. 10.60.*

In this investigation, the author intends to help solve the problem of the most profitable sizes of farms. He bases his conclusions upon data he gathered while at the University of Illinois, where he had been a German exchange student. The problem of the optimum sizes of farms has been of special interest in Germany during the past decade, where a series of similar studies has been made of this question which has

not yet been clearly answered even from the economic point of view.

The first part of the book deals with the entire United States, while the second part gives special attention to the corn belt. However, in discussing the corn belt, the author confines himself to that part of it which is in the state of Illinois. Concerning the United States as a whole he gives a brief and general survey of the historical development of the different farm sizes. The second and more specific part of the study is based upon farm records gathered by the University of Illinois for 3,566 farms for the period 1924 to 1929 inclusive. Thus the scope of this project is really smaller than the title indicates.

Since American agriculture is based mainly upon the family farm, the author included the family farms only. The result of these studies is that after all the optimum size of farms in Illinois lies between 100 and 380 acres for central Illinois and between 60 and 300 acres in northern Illinois. The main emphasis, however, is placed upon various specific problems of farm management, such as the relation between the size of farm and the organization of the farm, the relation between the size of farm and success in farming, etc.

The reader will perhaps be especially interested in the general statements relating to the sizes of farms. The author says that there is no tendency toward large-scale farming with hired labor. The size of farms will change but as a consequence of the choice of uneconomical sizes at the time of the original settlement which many times was precipitate and very hurried. On the other hand, extensive mechanization, in the wheat belt mainly, has greatly developed the farmer's capacity to handle more land and capital, so that an increase is taking place in the sizes of the family farms in those regions.

The book shows us another new method of approach to the problem of the optimum size of farms. Although the reader may not agree with the author in some respects; for example, the use of a limited number of farm records for a study of the optimum size of farms, and the method of applying various statistical processes, the research worker in farm economics will find the pub-

LEO DRESCHER

Smith, James Barclay. SOME PHASES OF FAIR VALUE AND INTERSTATE RATES. University Studies, No. 6. *Baton Rouge, La.: Louisiana State University Press, 1931. pp. 101.*

The object of this long essay is to simplify the issues arising in federal regulation of railway rates, especially those relating to Section 15a of the Interstate Commerce Act, which deals with rate-making policy and recapture of excess earnings. The author covers familiar ground in his analysis of valuation cases, and concludes that the various theories of the rate-base "have all been required by the Court as aids to finding the prudent investment and this wise counsel has been incorporated into statute" (p. 34).

The provisions and meaning of the valuation act of 1913 are briefly considered, as are those of Section 15a enacted in the Transportation Act of 1920. Little that is new is added to the subject.

Terminology is not always used correctly. For example, we read: "Other things being equal, return is the rate times the base" (p. 34); and "rates should not be confused with returns as rates are the charges for the service while return is the residue after deducting from the contributions of the ratepayers the cost of rendering the service" (p. 35).

Appendices I and II reproduce Sections 15a and 19a of the Interstate Commerce Act. HUBERT F. HAVLIK.

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